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Editorial

Spring is a wonderful time of year the SAD season of dismal autumn and dark winter is behind us and primroses daffodils and tulips give the optimism to Easter and the blossoming summer ahead From a business perspective the new Financial Year is about to start and we Budget Holders start to plan our new allocation of funds and almost as a reflex these days brace ready for the savings wedge that will be imposed as soon as the budget is allocated. This ever turning wheel often causes me to reflect that very little is truly new and that most changes somehow seem to take us where we have been before I remember years ago as a junior staff officer the then later SRA Surgeon Commander Sandy Craig saying in response to what seemed like a very difficult problem letter that the answer was always in the pack the difficulty was in finding out how far one had to go back in the packs to find the same question addressed before That counsel is as valid today as it was then very few challenges are truly new and equally few new ways/answers are new

On a similar theme the truism that one never stops learning is exampled by a recent initiative at the Defence Academy A new programme for 1* officers the Defence Strategic Leadership Programme has been started and it is a fascinating and illuminating programme of short courses aimed at raising the awareness and knowledge of senior management The programme starts with a week at the Defence Academy and is built on by attendance at a series of electives two and three day seminars on a whole range of topics from Strategic Thinking to Coaching skills In all it is a significant investment and a very worthwhile programme that gives a continuum of training at the Defence Academy from Warrant Officer through to 2 *

This edition of the journal is based around a mental health theme and I am most grateful to Surgeon Commander John Sharpley for coordinating and reviewing all the themed articles for me I hope you will enjoy the contents The next edition is based around a Nelsonian theme to mark the 200th Anniversary of the Battle most of you will be aware of the T200 celebrations planned if not I direct you to the website for full details and methods of obtaining tickets www T200 com The final edition for 2005 will be the proceedings of the MDG(N)s Study Day due to be held this year in September

Finally I must apologise to Mrs Eva Fitzpatrick, we published her very interesting letter in the last edition and I mentioned it in my Editorial but for some inexplicable reason her name came out as Mrs Mackenzie – I am so sorry

Frank Reed

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Gulf War Syndrome

– The story so far

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INTRODUCTION

Assuming that you read a newspaper listen to the radio or watch the television then you will have heard of Gulf War Syndrome The debate about whether the syndrome exists and if so what to do about it is one of claim and counter claim Given that military personnel recently deployed on war fighting duties in Iraq and continue to carry out peace enforcement duties there then the syndrome and the associated media fuelled debate is of great relevance to military medical services around the world No one would be surprised if the emergence of a new syndrome as a result of the recent war in Iraq begins to feature on the front pages of the tabloids within the coming months

The Ministry of Defence is funding a substantial investigation into the health effects of having deployed troops to the Gulf in 2003 and the King s Centre for Military Health Research is conducting the main push of the current research The purpose of this paper is to bring the reader up to date with the current thinking about Gulf War Syndrome relating to the 1991 Gulf War

THE GULF WAR AND ITS AFTERMATH

Iraq invaded Kuwait on August 2nd 1990 The subsequent ground war that followed lasted only four days and was a resounding military success Coalition forces came from the United States the United Kingdom Saudi Arabia Egypt and over thirty other countries also contributed smaller numbers

Not only was the campaign a military success it was also a medical success The traditional causes of non battle casualties such as heat stroke and dehydration were rare during the Gulf campaign and there is no evidence for any deaths from those sources among American or British personnel Thus at the end of the campaign military medical services must have been delighted with the success of their preventive measures However with the passage of time such delight appears to have been premature

It was shortly after the cessation of hostilities that reports started to emerge from the United States of clusters of unusual illnesses occurring amongst Gulf War veterans Claims were made that previously fit veterans had developed unusual diseases illnesses and symptoms Reports also emerged of children with birth defects being born to Gulf War veterans The media reported these stories with increasing fervour and eventually at first the US and then the UK begun to conduct formal epidemiological research Interestingly the Uk s research effort was initially funded by the US Department of Defence and not the Ministry of Defence

THE EVIDENCE SO FAR

Initial Studies

Initial studies began in the United States making use of health registries established by the US Government to provide systematic clinical evaluations and was then repeated in the United Kingdom with the establishment of the Medical Assessment Programme (MAP) The analysis of data from those programmes (over 100 000 people have attended them) have not suggested any unusual pattern of illness instead the

largest diagnostic category has been medically unexplained symptoms and syndromes[2,4,6]

Because the personnel attending such programs are self selecting only limited information of scientific value can be drawn from the data However one would expect that if service in the Gulf was associated with either disease new to medical science (as with the first appearance of AIDS at the beginning of the 1980s) or a dramatic elevation of a recognised but hitherto rare condition, then this would have been detected. Neither has happened.[6]

Epidemiological studies

Comprehensive analyses made of the mortality of both the United States and United Kingdom Gulf cohorts Contrary to media stories the results show that there has been no increase in mortality in either cohort other than in increase in accidental death (US and UK) or suicide (US only) as observed in the aftermath of other conflicts [7,8,9]

The Iowa Persian Gulf Study Group was the first to report increased rates of symptom reporting in a Gulf cohort Symptom defined conditions ranging from chronic fatigue syndrome depression post traumatic stress disorder and others were all elevated

King s College London undertook a comprehensive study of 4246 UK Gulf war veterans drawn from all three Armed Services with similar numbers of non deployed personnel and with an active duty control group They found some striking results UK Gulf veterans were between two and three times more likely to report each and every one of the 50 symptoms that were inquired about Whatever the symptom the rate was at least twice as high in the Gulf cohort as either the non deployed cohort or the Bosnia cohort Health perception was decreased in the Gulf cohort but physical functioning was only very slightly different and still above expected non military norms Hence the Gulf veterans experienced more symptoms endorsed more conditions felt worse but were still physically functioning well as a group than either the non deployed cohort or those deployed to an unpleasant and stressful Bosnian theatre of operations

Figure 1

Figure 1 illustrates this graphically. Each data point represents an individual symptom. To the left are common symptoms, such as fatigue or headache; while to the right are unusual symptoms such as lump in throat, night sweats or passing urine more often. It is clear that there is no difference between those deployed to former Yugoslavia and those in the military in general in 1991. It is equally evident that the Gulf cohort is different. Of interest is that the shape of the curve between the Gulf and the control groups does not differ suggesting that no specific symptom is linked with Gulf Service[3, 23]. Rather personnel who deployed to the Gulf just report more of every symptom that there were asked about.

Other epidemiologically based samples all show essentially the same findings[4, 5]. A recent review by Barrett and colleagues concluded that overall Gulf War veterans report two to three times the rates of common symptoms as their non deployed colleagues[6]. Similarly other studies have also found that health perception and quality of life is impaired in Gulf deployed compared to non Gulf deployed personnel[2, 6].

Limitations of the studies

The epidemiological studies have all made use of self report measures which are known not to be a good guide to findings on clinical examination[9]. For instance when medically unexplained syndromes which are characterised by symptoms quite similar to those of Gulf War Syndrome have been investigated in the community where they are very common, fewer than 1 in 5 are found to have a discrete physical explanation[25]. Thus one cannot make simple assumptions that reporting of symptoms is clearly linked with a diagnosable disease entity[2].

Both recall and participant biases are important considerations when examining the evidence around Gulf War Syndrome. The literature confirms that the recall of military hazards is influenced more by a person's current psychological health than it is by fact[27]. Indeed when the medical records of a group who were supposedly prepared for deployment to the Gulf (in terms of vaccinations) but did not actually deploy, less than 1% of those who recalled having received a biological warfare vaccine had done so. What can never be catered for is that those personnel who did in fact deploy to the Gulf will always remember that they were there. As such participant bias is likely to operate and those who deployed are likely to attribute any medical disorders they develop to their Gulf deployment. Given all the publicity surrounding Gulf War Syndrome who can blame them?

The Gulf Health Effect

Although the distribution of symptoms in the community is not categorical if one imposes arbitrary but not implausible cut offs or case definitions then the excess burden of caseness[1] or ill health seems to be between 20 to 30%[24, 26-27].

There is no evidence that the Gulf Health effect is actually an increase in the prevalence of an already identified disorder with a few exceptions. Investigators have found an increase in seborrhoeic dermatitis[28] although this has attracted little attention and no comment. What has understandably attracted attention is the possibility of an increase in a variety of a rare but usually fatal neurological disorder amyotrophic lateral sclerosis (ALS). A large scale US study using multiple methods of data collection including newspaper articles and website appeals has reported 40 cases in US Gulf veterans a significant increase sufficient for the US government to declare the disease service related[8]. However it is worthy of note that there has been no increase in mortality due to neurological disease which would be expected given that ALS is a fatal disease. Irrespective of this whilst ALS is a devastating disease for those affected it is still very rare in veterans populations and cannot account for anything more than a fraction of the observed increase in morbidity in Gulf veterans.

Who is at risk?

In general no evidence has been found to suggest that the Gulf war health effect is confined only to a particular sub set of the entire deployment. This is unfortunate as had this occurred than it would have provided valuable clues as to aetiology. The predictors of ill health are not particularly surprising and tend to be non specific. For example lower rank[29], which is highly correlated with education[2, 3], is firmly associated with ill health.

Although some studies have found differences between the Services with for example the Navy being less at risk[29] in the UK we found no

such differences. Several US studies have reported that reservists and women are at increased risk[8, 9] but this was not the case for UK personnel. However the UK Armed Forces used far fewer reservists and women during the conflict, which might explain these differences.

Is there a gulf war syndrome?

A syndrome implies a unique constellation of signs and/or symptoms. For there to be a Gulf War Syndrome then not only must there be evidence of such a unique constellation but it must also be found in the context of the Gulf conflict and not elsewhere[10].

Robert Haley, a Dallas based epidemiologist, was the first to argue in favour of a unique Gulf War Syndrome[11] using factor analysis. However his data came from a much studied single naval reserve construction battalion already known to have high rates of illness, had a 41% response rate and a sample size of 249. Haley's study did not have a military or non military control group. This makes it difficult to establish whether or not the proposed new syndrome is indeed linked to Gulf service or not[12]. Haley has continued to pursue the trail of a unique Gulf War Syndrome with fervour and latterly has claimed to have found specific evidence of damage to the basal ganglia and pons. He believes the cause of this is exposure to chemical weapons and/or pesticides[13] and that those exposures have led to specific central and peripheral nerve damage since the end of the conflict. He has stated that this risk will continue to increase over time leaving a Sword of Damocles hanging over the heads of the veterans. Of interest is that a series of expert review committees and panels have failed to be convinced by the suggestion of widespread use of chemical weapons, whilst the suggestions of specific localised brain damage needs to be replicated. Of course if there were no chemical weapons then one would suppose that there could be no Haley's Gulf War Syndrome.

Other epidemiological studies have generally not found evidence of a unique Gulf War Syndrome. True clusters of symptoms can be found but none that are unique to Gulf veterans. In the King's study of UK Gulf veterans there was evidence to support a particular factor structure to symptoms in the Gulf cohort but this was no different from the factor structure in the Bosnia or Era controls. The Gulf group had more symptoms experienced at greater intensity but there was no difference in the way these symptoms could be organised[14]. A series of controlled US studies draw similar conclusions[15-18]. Only Kang and colleagues find something different in a very large study of deployed and non deployed veterans. Five of six factors were very similar between the groups but there was one Gulf factor containing symptoms such as blurred vision, loss of balance, tremors/shaking and speech difficulty[19]. Those loading on this factor reported substantially more Gulf exposures such as Depleted Uranium, botulism vaccine (not used by UK forces), chemically resistant paint, eating contaminated food and exposure to nerve gas. Once again this raises the question of the direction of causality and recall/participant bias.

There is evidence of an increase in other unexplained syndromes in Gulf veterans including such concepts as Chronic Fatigue Syndrome (CFS), Fibromyalgia and Multiple Chemical Sensitivity[20,21,22,23]. But this is really only another way of reporting that the overall burden of symptoms is increased – explaining one symptom defined condition ("Gulf War Syndrome") by another (CFS) does not advance knowledge very far.

The balance of evidence is currently against there being a distinct Gulf War Syndrome. In many ways it is a side issue that has attracted more interest and discussion than it deserves. The key question is whether or not there is a Gulf health effect and this is established beyond reasonable doubt. Whether or not this amounts to a unique illness identifiable only by complex statistical techniques seems to be a secondary issue.

POSSIBLE EXPLANATIONS

We will probably never know the precise explanation for the increase in ill health seen in members of the Armed Forces of several coalition countries who took part in the Gulf War. It is almost certain there is no single explanation. However three different possible viewpoints are credible.

Gulf War hazards

Firstly it is fair to ask whether the Gulf War health effect is the result of biological hazards in the gulf. The media would have us believe this

is the case and that the particular hazards of the Gulf conflict especially the countermeasures taken to protect the combatants from the threat of chemical and biological warfare (CBW) have caused health problems However the research in this area is conflicting It is accepted that there is a link between receiving multiple vaccinations in general and those against CBW agents in particular and the persistence of symptoms despite controlling for obvious confounders The finding that multiple vaccinations in other contexts including deployment to Bosnia was not associated with any increase experience of symptoms suggests some interaction between multiple vaccination and active service deployment to the Gulf [1,2,3]

Exposures to other deployment associated hazards such as pyridostigmine bromide (PB) tablets depleted uranium pesticides or to the smoke from the oil fires ignited by the retreating Iraqi forces have not been shown to be linked to the development of symptoms Much debate has followed the publishing of a considerable amount of conflicting evidence but it is clear that there is no conclusive proof to suggest that any Gulf deployment hazard is clearly connected to an ill health effect An example of the conflicting evidence comes from a small group of US Gulf veterans that were definitely exposed to depleted uranium in the form of shrapnel fragments Despite intensive investigations and being monitored for over 10 years although minor immune system changes can be detected and there are subtle changes in their cognitive function there is no clear cut evidence of tissue damage in spite of persistently elevated urinary Uranium levels [4]

Detailed studies of the peripheral nervous system in both US and our own epidemiologically derived samples have failed to find evidence of neuropathy[5] including normal findings on the sensitive single fibre EMG paradigm which is strong evidence against any chronic peripheral nerve damage[6] A huge US epidemiological survey of Gulf veterans and their families has recently come to same conclusion[7] There is also little evidence of central nervous system damage as indicated by objective evidence of neuropsychological deficits [8]

In summary there is some evidence to suggest that some of the new hazards to which the Armed Forces were exposed during the Gulf War may be associated with unexpected side effects and perhaps later ill health Some claims need replication and others remain implausible

Post conflict ill health

A second argument is that gulf war illness is a modern manifestation of post conflict ill health and indeed similar syndromes have indeed been found after other conflicts[9] Interpretable medical records and accounts really only commence from the middle of the 19th century but from then onwards the literature contains clinical descriptions of ex servicemen with conditions that do show considerable similarities to the Gulf narratives These conditions have received many different labels Soldier s Heart later termed Effort Syndrome Shell shock neurasthenia Agent Orange Syndrome and Post traumatic Stress Disorder

Other research which has examined this matter has come to the same conclusion that when military personnel go to war some come back and report feeling ill For instance Jones and Wessely conducted a systematic study of UK war pension files from the Boer War via the First and Second World Wars and ending with clinical files from the Gulf War Medical Assessment Programme[10] The results showed that post conflict syndromes which show considerable similarities to Gulf War illness have been reported after all the major conflicts involving the British Armed Forces That war is dangerous for health should not surprise many readers

Of interest is that whatever the nature of the Gulf health effect the most classic psychological post war syndrome post traumatic stress disorder (PTSD) is elevated in UK Gulf veterans but not to the extent that could explain the overall increase in ill health[11] The relative risk was very similar to that in an overall meta analysis of nine studies of psychiatric disorder in gulf war veterans which reported an odds ratio of 3 2 for the risk of PTSD [12] but the attributable risk was low in other words most symptomatic gulf war veterans did not have PTSD

Medically unexplained symptoms

The last argument that may explain the Gulf health effect is that the war took place in the context of a western world where symptoms similar to those of GWS exist in people who

have never been in the gulf and indeed h[illegible] even served in the armed forces

This may at first seem a surprising proposition However patients with multiple unexplained symptoms similar to those reported in the narratives of Gulf veterans are also encountered in civilian medical practice and literature One finds such material under diverse headings such as ME total allergy syndrome electrical hypersensitivity dental amalgam disease silicon breast implant disease hypoglycaemia chronic Lyme disease sick building syndrome and many more

The professional literature detailing conditions such as chronic fatigue syndrome (CFS)[1-3] multiple chemical sensitivity (MCS)[4] fibromyalgia irritable bowel syndrome (IBS) and others overlap not only with each other[5] but also with Gulf War illness

MORE RECENT DEVELOPMENTS

At the end of 2004 there were two important reports concerning Gulf War illnesses reports published The Research Advisory Committee on Gulf War Veterans Illnesses was established by the Department of Veterans Affairs Its report published in the US on 12 November 2004 detailed that the Gulf War illnesses were probably due to neurotoxins and more research was needed[6] The UK hosted an Independent Public Inquiry on Gulf War Illnesses chaired by Lord Lloyd of Berwick The inquiry was privately funded and the names of those funding it have not been made public It concluded that the term Gulf War Syndrome is valid and that payments should be made to those suffering from it

Neither of these reports had needed to any other data or research findings other than those that were in the public domain as detailed in this paper So why have they come to such radically different opinions to the majority of the academics who have investigate the Gulf war illness sign? One can only speculate as to the political pressures that have been brought to bear upon those conducting the inquiries

What is clear is that the extensive research into GWS has shown conclusively that a substantial number of GW veterans report feeling unwell This finding has been replicated by scientists in [illegible] the elusive [illegible] factor or [illegible] deliver even if there is political pr[illegible] such an explanation Although [illegible] there will be many more publication [illegible] examining the health of those who served in the Gulf War given the difficulties in verifying exposures and the difficulty in conducting research so many years after the end of the war it is hard to see how this complicated jigsaw will ever be completed Perhaps it is now time to examine what can be done to assist those who are suffering and to continue to ensure that future conflicts leave those who serve without a legacy of ill health Perhaps when considering what may have caused the problem in the first place Lord Lloyd had something important to add to the debate when he stated in his report As to these causes different views are held The jury is still out "

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Deliberate Self Harm in the Royal Navy

An Audit of cases presenting to the Department of Community Mental Health, RH Haslar between 1 March 1999 and 28 February 2002

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INTRODUCTION

Suicide and its associated behaviours are matters of considerable general and particular interest to the Armed Forces. Recent years have seen a number of UK Government sponsored initiatives addressing these problems. Standard Seven of the National Service Framework for Mental Health outlined the Government's ambition to reduce the number of suicides by one fifth by 2011. Only last year guidance was issued on the management of self harming behaviours encountered in primary and secondary care settings. In these days of clinical governance it goes without saying that the Defence Medical Services will strive to achieve these recommendations. Of particular relevance to the Defence Community is the ongoing controversy surrounding the events at Deepcut Barracks Surrey[1].

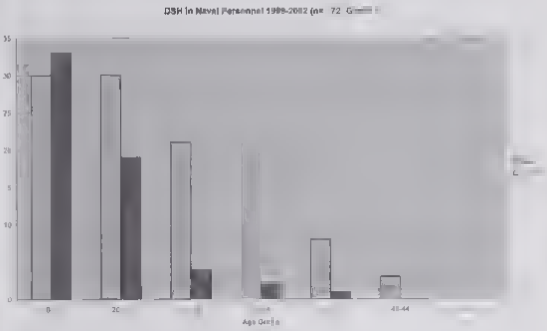
Suicide is a relatively rare form of death. As will be made clear below it is even rarer amongst most service personnel than their civilian peers. Perhaps because of its relative infrequency (in fact deaths from any cause in an otherwise healthy population are unusual) it becomes an event that many in positions of responsibility fear and would (understandably) like to avoid. This is particularly true in the current legal and media climate producing as it does an acute locus on the issue of duty of care.

Deliberate Self harm (DSH) also commonly termed attempted suicide is far more common than completed suicide. The data presented in this article suggests that it is less frequently encountered amongst Naval Personnel than civilians. Nevertheless it is an issue that needs to be taken seriously. It is perfectly possible for a member of the RN Medical and Nursing Services to complete a long career without ever once coming into even indirect contact with a completed suicide event. Not having to manage at least a few DSH episodes over the same period would be something close to a miracle. DSH poses a number of challenges. The first one is in terms of risk assessment and management. Does a DSH episode presage suicide? How should individuals who harm themselves be managed effectively? Are they genuinely distressed or time wasters who need a stiff talking to? The second challenge lies in the status of the Serviceman or woman as an employee of the MOD. How reliable is this person? What is their prognosis in terms of employability[1]?

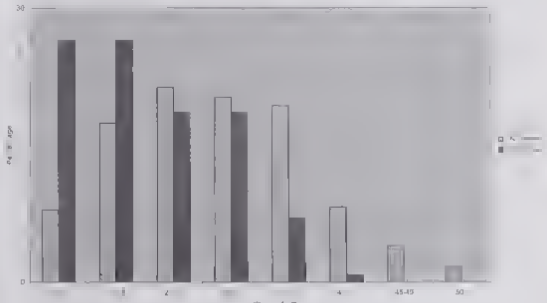
The primary focus of this article is an audit of DSH in Naval Personnel carried out over a three year period. It sets out to establish the demographic pattern of DSH amongst Naval Personnel as well as examine background factors that might cast light on the motivations for the DSH episode itself.

NOTES ON TERMINOLOGY

The behaviours discussed in this article have historically been given various labels. These have included attempted suicide, suicidal gesture and para suicide. For various reasons most are unsatisfactory. Deliberate Self harm (DSH) whilst not without problems is in common use in the UK and is therefore preferred here. It should be noted that behaviours involving compulsive cutting or burning with cigarettes of non vital skin areas is excluded from this study.

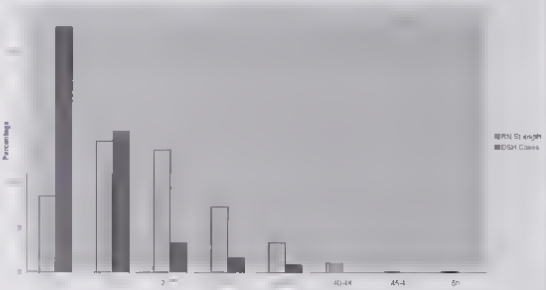


Graph 1



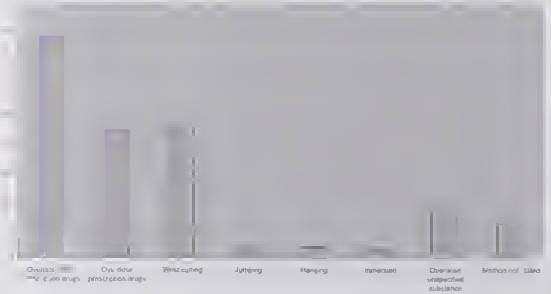
Graph 2

Female Naval Strength by Age Group against DSH Presentations by Age Group 1999-2002 (n= 59) Graph 3

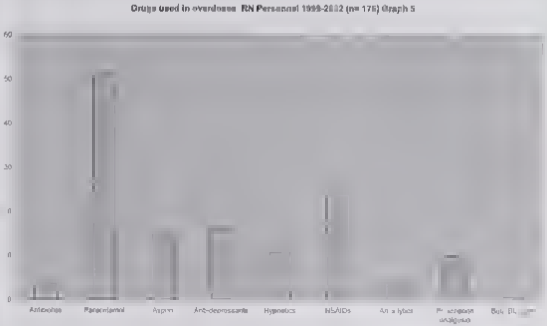


Graph 3

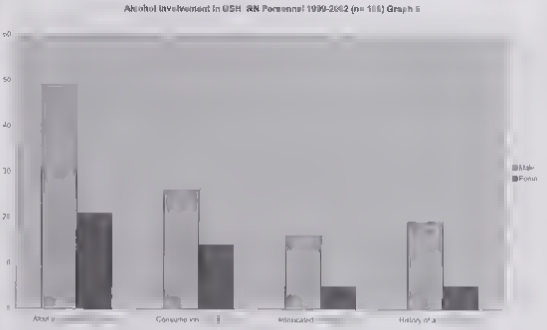
DSH Method RN Personnel 1999 2002 (n= 179) Graph 4



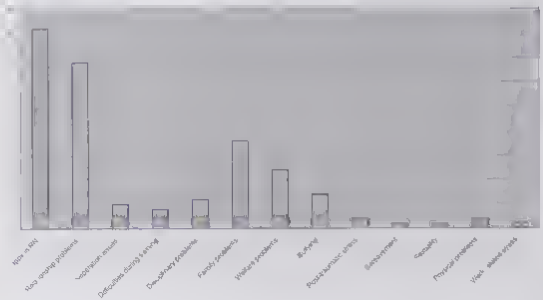
Graph 4



Graph 5

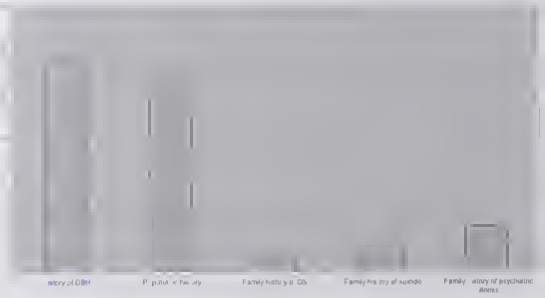


Graph 6

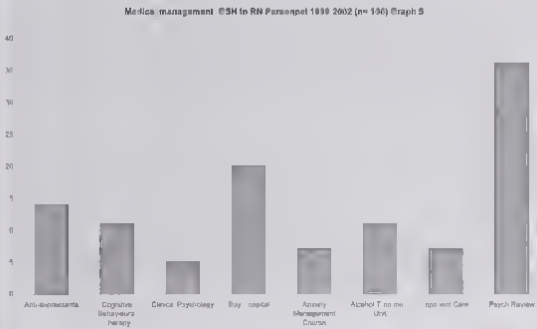


Graph 7

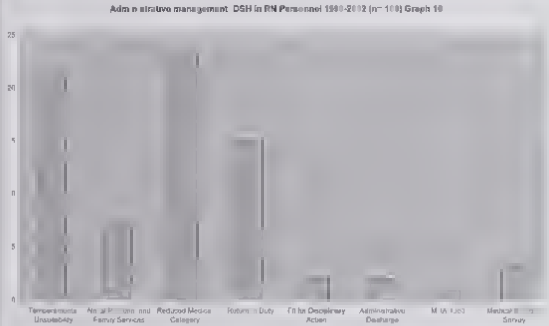
Historical factors noted in assessment of DSH in RN Personnel 1999-2002 (n= 195) Graph 8



Graph 8

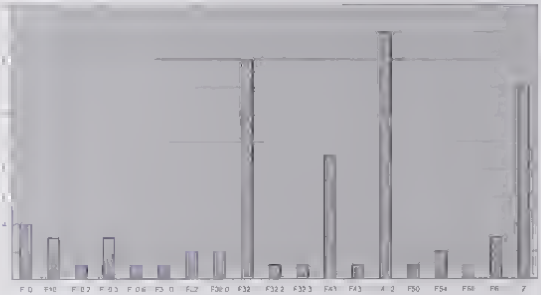


Graph 9



Graph 10

ICD 10 Diagnostic Codings In RN Personnel Following PBH 1999 2002 (n=77) Graph 11



Graph 11

Diagnostic Code	Description	Number of occurrences
F10	Mental and behavioral disorders due to use of alcohol	4
F10.1	Harmful use of alcohol	3
F10.2	Alcohol dependence syndrome	1
F10.3	Alcohol withdrawal state	3
F10.6	Amnesic syndrome associated with alcohol use	1
F31	Bipolar affective disorder current episode hypomanic	1
F32	Depressive episode	2
F32.0	Mild depressive episode	2
F32.1	Moderate depressive episode	16
F32.2	Severe depressive episode without psychotic symptoms	1
F32.3	Reaction to severe stress and adjustment disorders	1
F43	Post traumatic stress disorder	9
F43.1	Adjustment disorder	1
F43.2	Eating disorder	18
F50	Psychological and behavioural factors associated with disorders or diseases classified elsewhere	1
F54	Specific personality disorder	2
F60	Mixed and other personality disorders	1
F61	General examination and investigation of persons without complaint and reported diagnosis	3

Table 1 From WHO (1992)

Demographic factors associated with high risk of suicide (Table 2)

- Male
- Age over 40 (but increasingly in younger men)
- Social class V
- Unmarried or socially isolated
- Family disruption (such as bereavement or divorce)
- Social disruption (loss of home unemployment, redundancy retirement)
- Family history of mood disorder or suicide
- Some occupations- farmers doctors
- Mental disorder especially depression schizophrenia or alcohol dependence
- Personality disorder especially young men with a history of self harm drug or alcohol abuse
- Physical illness especially chronic and painful
- Previous suicide attempts or episodes of deliberate self harm

From Davies (1998)

Patient factors associated with high risk of suicide (Table 3)

- Depression including the depressed phase of bipolar affective disorder
- Schizophrenia especially young men with depressive symptoms recurrent relapses fear of deterioration, prominent side effects from drug treatment
- Anxiety disorders especially associated with social phobia and panic attacks
- Recent life events especially when lacking social supports or relationships
- Preparations hoarding tablets, saying goodbyes putting personal affairs in order
- Mental state guilt pessimism nihilistic thoughts despair hopelessness ignition self neglect detachment or indifference
- Recovery from depression increased physical energy with persisting depressed mood recent discharge from hospital
- Availability of means of suicide access to guns isolated places

From Davies (1998)

The terms Naval Personnel and Naval Service should be treated as including Royal Marines and QARNNS personnel

STUDY METHOD

Between 1st March 1999 and 28th February 2002 an effort was made to capture data on all cases of DSH coming to the attention of the Department of Community Mental Health at Haslar Information was available from two sources

1) Case notes for those persons seen in the DCMH or in peripatetic clinics

2) Casualty Reporting Signals received by the DCMH (DSH being a reportable occurrence)

The amount of information available was generally much greater for the former

Over the course of the study period a total of one hundred and seventy eight Royal Navy Royal Marine and QARNNS personnel came to the attention of the DCMH as the result of a DSH episode Two cases were excluded from the audit due to a lack of sufficient data

This figure (n= 178) is not considered by the researcher to be a comprehensive total for the Naval Service as a whole

RESULTS

The distribution of DSH by age group for a total personnel (Graph 1) echoes that noted in civilian studies with the majority of episodes occurring amongst younger people[1]

Comparison of percentage [illegible] rate by age group to percentage age distribution of DSH episodes (Graphs 2 & 3) supports this view with both sexes being over represented in the DSH figures up to the age of 24. This is most marked for females aged 16-19. In fact this reflects a DSH rate for this group of one episode per 54 serving. This compares with a whole Naval Service rate of one in 700 on the basis of these figures. The next highest rate is found amongst males aged 16-19 (one in 308).

There is a notable drop in the rate of DSH compared to manpower strength for males between the 30-34 and 35-39 age groups. The fall in the female is less abrupt and is spread between the 16-19, 20-24 and 25-29 age groups. These findings tend to support and echo the civilian findings that DSH as a behaviour becomes less common with age[1].

The high incidence of non-prescription drugs (Graphs 4 & 5) used in DSH is similar to civilian studies and probably reflects the easy availability of such substances. Hawton et al reported that a large study of DSH episodes in the Oxford area found that 88% involved self poisoning[1]. Of these 50% involved Paracetamol. Non steroidal Anti inflammatory drugs were the next most commonly taken.

Hawton et al also found that antidepressants were the most frequently taken prescription medication in self poisoning. Wrist cutting (n=45) did appear to be more common amongst Naval Personnel (25.6% of episodes) than amongst civilians (8.3%).

Of the case records examined during the audit (n= 106), 70 mentioned alcohol in relation to the DSH episode. Of these only 3 specifically excluded it as a factor. The findings from the remainder can be grouped into three (not mutually exclusive) groups (Graph 6).

The largest group involved those persons noted to have been drinking in the hours immediately preceding the DSH (Consumption prior to DSH).

A number of persons were considered to be drunk either at the time of the DSH or in the immediate aftermath by duty sickbay or A & E staff (Intoxicated).

Others were described as having a history of alcohol problems.

Civilian studies have noted the relationship between alcohol consumption and DSH.[5] The latter study found alcohol to be a significant factor in 21.3% of civilian DSH cases. Amongst the Naval Personnel in this study whose case records were available, the figure was 66% (differences in sample size and classification should be borne in mind).

All the case notes examined described circumstances in the person's presentation that appeared significant in the occurrence of DSH. These divided into two groups. Current Factors (Graph 7) related to those situations presently worrying the individual and could be viewed as precipitants to the DSH episode itself. Historical factors (Graph 8) are risk factors for DSH and suicide. Information that one might expect to be recorded in a clinical risk assessment.

The prevalence of unhappiness in the Naval Service in a group of individuals with an overall relatively short length of service is notable.

A previous record of DSH and a psychiatric history are the most notable historical factors. This is a finding that civilian studies also report[6].

As might be expected, Medical Management of DSH cases (Graph 9) involved a wide range of interventions. A number of points are worth comment. Taking into account all interventions, a high rate of follow up was achieved. This is an area consistently reported to be problematic in civilian studies. Given the frequent identification of alcohol problems of various types (Graph 6), the low number of referrals to specific alcohol interventions is perhaps a little surprising. Lastly, the low rate of admission to in patient mental health settings (5% of episodes) might also seem rather low.

Similarly, administrative actions relating to DSH (Graph 10) were varied. The manpower implications of medical downgrading and recommendations for Temperamental Unsuitability are discussed further below.

The ICD 10[8] diagnostic categories of 77 individuals were available from case records and can be viewed in Graph 11 and Table 1. A number of these are general classifications (2

digit numbers) indicating the area of a person's diagnosis (n= 22) rather than the specific categorisation. The reason for this is not made clear in the clinical notes. The most prevalent disorders were stress related problems (n= 28) and depressive episodes (n= 22). These were followed by alcohol related disorders (n=12) which was the group of diagnoses most frequently co morbid with other conditions (n= 7).

The use of the Z classification implies that clinical examination has excluded mental illness or that it was performed for administrative medico-legal or other reasons rather than for clinical need.

FOLLOW UP OF DSH CASES 1999-2001

Between 1st March 1999 and 28th February 2001 121 Naval Personnel came to the attention of the DCMH at Haslar as a result of DSH. Seventy three of these had case records available for perusal. These formed part of the audit described above.

The opportunity was taken to review these records again with a view to establishing the events occurring following the initial management described above. It was not possible to do this within a precise time frame so the records were reviewed at minimum of 12 months and a maximum of 24 months after initial contact by the client with the DCMH. The following were noted:

Mortality

One subsequent suicide was reported amongst the 121 individuals seen or reported to the DCMH. (No further suicides have been notified at the time of writing, although some individuals who have left the Naval Service may have been lost to follow up).

Morbidity

Thirty people were placed in a reduced medical category either immediately after the DSH episode (n= 17) or in the subsequent 12-24 months (n= 13), thus restricting their employability. Periods of downgrading varied from one to eighteen months.

Three people were admitted to in patient mental health facilities. Of these one committed suicide almost immediately (as noted above).

The others were discharged for psychiatric [illegible] and seven [illegible] respectively.

Manpower wastage

Six people were made permanently unfit for naval service on mental health grounds after downgrading periods of 2, 5, 6, 8 and 18 (two persons) months respectively. These are in addition to those mentioned on Graph 10.

In the original audit 16 recommendations of assessments for Temperamental Unsuitability were noted. Of these there was no later contact recorded in 14 of the case records, presumably indicating the fact that these recommendations were acted upon. Since the initial audit a further seven individuals had been recommended for discharge on the grounds of Temperamental Unsuitability. Lack of later contact would suggest that these persons had also been discharged.

Two individuals were discharged on disciplinary or administrative grounds.

It is clear from the above figures that DSH episodes are linked with a considerable permanent loss of manpower from the naval service. Of the 73 cases reviewed here it would appear that at least 29 left the RN/RM prematurely within two years of their DSH episode. To this must be added the considerable amounts of time spent by some personnel in a reduced medical category, thus adversely affecting their employability.

DSH EPISODES AMONGST NAVAL PERSONNEL AND THE RISK OF SUICIDE

The importance of DSH episodes is often seen to be their relationship to eventual suicide. For this reason DSH is viewed as a major risk factor in the assessment of potentially suicidal individuals. A single positive finding, however does not suffice. Conventionally an individual's history and current mental state will be compared against a list of risk factors (see Tables 2 & 3). There is neither the space nor the need to conduct an exhaustive comparative review here. The intention is merely to highlight key points.

In some areas the quantitative picture of DSH in Naval Personnel that has emerged does show commonality with known suicide risk factors.

Like suicide (unmarried and socially isolated) DSH is more common amongst single and separated personnel. Repetition of DSH was present in almost a quarter of Naval Service cases where information was available. Depressive illness was a common diagnosis amongst the DSH cases.

For other factors the picture is somewhat more mixed. In terms of Mental Disorder this was positive for depression and alcohol problems. On the other hand psychotic presentations were exceedingly rare in Naval Personnel. Personality Disorder which is a known suicide risk factor was diagnosed at a low rate in the DSH cases. On the other hand a personality assessment questionnaire used in the DCMH suggested the presence of borderline traits in this population. Family history of mood disorder and suicide was also infrequently present. This however may be due to poor reporting or recording. Anxiety disorders were certainly present, although not in the forms linked to suicide.

In other areas the emerging picture of DSH in Naval Personnel differed from known suicide risk factors. Although more males overall were seen in terms of rate per head of population females were highest. The age distribution of female DSH is also the opposite of that observed in the UK suicide rate where risk tends to increase with age. Physical illness was not common amongst these service personnel. Perhaps most significantly, despite having easier access than most civilians to lethal means of suicide Naval personnel do not appear to have made use of them. In fact as noted above[5] in terms of methods chosen to self harm Naval Personnel tend to resemble their civilian counterparts.

Although not the focus of this article it is appropriate at this stage to briefly discuss the situation regarding suicide amongst Naval Personnel. Fear and Williamson (2003) note that the UK Armed Forces from 1992 to 2001 "had a significantly lower number of suicide and open verdict deaths than expected compared to the UK civilian population". There was a difference demonstrated between the Services with the Navy and RAF experiencing lower rates than the Army. Between 1984 and 2002 the highest suicide rate for Naval Personnel was amongst males aged 35-39. Fear and Williamson did not examine female suicide rates in any detail due to its comparative rarity (10 suicide and open verdict deaths for female service personnel over a 19 year period) and the smaller numbers of women serving compared to males.

DISCUSSION OF FINDINGS

On the basis of the audit described above there was approximately one DSH episode for every 700 naval personnel during the study period. This compares favourably with the general population rate of one DSH episode per 400. As noted above however there are wide variations in terms of age group as to rate of occurrence. In many ways the Naval DSH episodes resemble those of the Oxford area studies[6]. It is commonest amongst the young particularly females. The means of self harm employed would appear to be similar especially with regards to the use of Paracetamol, NSAIDs and antidepressants as the overdose drugs of choice. This is striking when considering that Naval Personnel have easier access to more lethal methods.

The higher prevalence of wrist cutting amongst service personnel is less easy to interpret. A comparison of self poisoners with wrist cutters demonstrated that the latter were more likely to be male and slightly older than the former. It may be that this reflects the known male preference for more violent and damaging methods of self harm.

The involvement of alcohol in DSH was common to the Naval and civilian studies. Naval personnel did however demonstrate a higher incidence (21.3% to 66%). Why this should be so is unclear. It may reflect different drinking norms between the two groups or a preference for substances other than alcohol amongst civilians.

Unsurprisingly given the formal and informal procedures and pressures of screening prior to and after entry to the Service enduring major mental health problems such as schizophrenia were almost entirely absent amongst service personnel.

One factor generally neglected in civilian studies is the question of the link between DSH and employability. As has been noted nearly 50% of those for whom details are available

spent periods varying from one month to one and a half years in a reduced medical category following a DSH episode. Even more significant in terms of manpower wastage is the finding that over a third (n=29) had been discharged by routes other than normal time expired release within two years of the initial presentation. The main method of discharge was Temperamental Unsuitability (n=24). When this is considered alongside the fact that dissatisfaction with Naval Life or wanting to leave is the commonest factor in presentation (Graph 7) it is hard not to link these findings. To this can be added the number of F43.2 Adjustment disorder diagnoses possibly reflecting distress at a situation perceived as unsatisfactory by the individual. With this knowledge it is possible to view a certain amount of the DSH episodes observed amongst Naval Personnel as a cry for help or demonstration of distress. If this is the case it would appear to be successful in a large number of instances.

As noted above, an effort has been made to compare the audit findings against known suicide risk factors. The results have been mixed. Certain risk factors such as depressive illness, marital status and alcohol problems are clearly present. In terms of sex, age range and social problems however the suicide risk would appear to be much lower. There is of course a danger in the use of demographic factors in the prediction of suicide. At a population level they may be useful in allowing government or agencies to target services on vulnerable groups i.e. people with chronic mental health problems. At the level of face-to face interaction with at risk individuals they can become distracting. Applying population derived statistics in clinical risk assessment carries with it the danger of producing both false positives (which may waste resources) and worse, false negatives. Shea suggests the need to distinguish between demographic risk factors and what he terms risk indicators. The latter are findings based on assessment of the client's mental state. At its most basic this means understanding the client's own interpretation of their motivations and actions.

It could be argued therefore that such an audit is of limited usefulness in managing DSH amongst Naval Personnel. (Albert) that it may offer reassurance to Medical and Nursing Staff that the majority of DSH patients they see are not trying to kill themselves). In fact it is suggested here that the findings are useful at the group or population level, rather than that of the individual. This is not an entirely novel approach. Several studies within the US Military have looked at organisational and population level initiatives to reduce suicide [14] and self-harming [15]. Whilst the effect on suicide rates has been hard to quantify, there is evidence from these studies that DSH can be reduced. A reading of these in conjunction with examination of the findings from the audit described above allows the generation of prospective policies and practices that may be useful in reducing rates of DSH amongst Naval Personnel.

OPPORTUNITIES FOR PREVENTION

There is not sufficient space to discuss all the potential courses of action available. Many of them will not be of direct interest to Medical Services personnel. A number of those that are relevant or likely to involve medical input will be outlined to illustrate the general thrust of the policies being proposed.

Reduction of risk/access to means

Medication which might be used in overdosage is probably obtained mainly from two sources, the Sickbay and via over the counter purchase (See Graphs 7 & 8).

In the Sickbay a review of prescribing and dispensing practices might include setting a maximum number of doses to be dispensed at any one time, especially of analgesics and NSAIDs. At review patients should be asked to return unused medication to prevent accumulation of drugs in the back of lockers or cupboards. Medication amnesties could be promulgated through routine or daily orders.

Less control can be exercised over medication that has been purchased. Nevertheless retail outlets located within ships and establishments should have a policy on amounts of medication that can be sold to individuals. When a problem is identified with a retailer outside the establishment there are procedures available to raise concerns with the relevant civilian agencies.

Involvement of alcohol

It has been noted above that the involvement of

alcohol in Naval DSH episodes is above that observed in general population studies. It may be that prompt identification and management of problematic drinking will help to reduce the incidence of DSH.

Targeting of vulnerable groups

As DSH is most frequently encountered amongst the youngest members of the Naval Service, it follows that it will be most likely to be found in new entry and training environments. It is therefore important that establishments falling into this category are prepared to manage this situation effectively. This might include skills based training for Divisional and Instructional staff on the recognition and management of maladaptive stress in trainees, promotion of activities that increase morale and cohesiveness as well as raising awareness amongst the trainee population of available helping agencies. Such measures are of course Whole Ship activities although the Sickbay with support and advice from its CPN Team and DCMH would be key players in establishing, maintaining and monitoring such policies.

A note of caution must be sounded here. A too supportive environment might allow individuals who would not otherwise successfully complete the transition from civilian to service life to progress into situations such as operational units that are simply unable to provide the same level of support. Liaison in the form of multidisciplinary Carers Groups may be useful in the identification and management of vulnerable individuals.

Data generation and monitoring

Any system designed to achieve an aim must have available to it a benchmark on which to measure progress. It is argued here that the Naval Service currently lacks a robust system of data collection and management for suicide and especially DSH (a statistically far more common event). Until this is put in place it will be difficult to judge with any certainty the success or failure of initiatives to address the problem. In addition robust and large data sets will allow better identification of potential problem areas and opportunities for intervention.

Again, this will not be a solely medical exercise although the Sickbay is an obvious candidate to be the lead agency in data collection at a local level. US Forces already operate systems that could be adapted to Naval Service use if required.

CONCLUSIONS

DSH presents two major challenges to the Naval Service at the level of the individual and the organisation. As with such behaviour in any setting, it is crucial that proper risk assessment and management are performed in order to ensure that the person receives the best and most appropriate care and management available. The most important implication of the audit described above however is that DSH episodes do not occur in a vacuum. The person who harms him or herself is acting in an environment that imposes psychological, emotional and social pressures on them. Individual pathology is of course crucial in assessing and managing risk. These findings also reinforce the need to view the situation holistically and develop policies and practices that reduce and manage risk at an organisational level.

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How to TRiM away at Post Traumatic Stress Reactions:

Traumatic Risk Management – Now and the Future

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BACKGROUND

Numerous organisations including the Armed Forces routinely place their personnel into potentially traumatic environments It is known that exposure to traumatic events can lead to the development of psychological distress lowered morale and organisational difficulty It follows that military personnel are at increased risk of developing trauma related psychological problems and as such it would be useful if a system could be put in place to mitigate such risks

This paper aims to examine the development of Trauma Risk Management or TRiM a system that was pioneered with the Royal Marines and to explain the validation study that is now underway to investigate what place if any TRiM has in the routine management of traumatic events that effect naval personnel

A HISTORICAL PERSPECTIVE

Systems to prevent trauma related psychological injury are not new The first of such systems was Critical Incident Stress Debriefing (CISD) developed by Jeffrey Mitchell after his experiences as a fire fighter in the USA Mitchell claimed that CISD prevented post traumatic stress disorder (PTSD) and other similar systems of post incident emotional catharsis have made similar claims Nevertheless as research on so called "psychological debriefing" was conducted including a Cochrane systematic review of randomised controlled trials of early single session psychological interventions it became clear the preventing post incident psychological injury is far from easy[1] Such single session debriefings have now been shown to be at least no use and at worse harmful Consequently in the year 2000 within the UK military the Surgeon General banned the use of single session psychological debriefing[2] and the Department of Health has recently stated that single session debriefing appears unhelpful The National Institute of Clinical Excellence's guidelines on the treatment of PTSD are due to be published shortly and early drafts make it clear that the guidelines are likely to also warn against the use of single session interventions such as CISD However even though debriefing is not effective at preventing psychological injury more complex early psychological therapies including cognitive behavioural therapy applied some weeks following the traumatic event appear to be beneficial for the few people who are likely to require them

PREVENTION OF PSYCHOLOGICAL INJURY

It is utopian to believe that traumatic stress can ever be eliminated from any military organisation Assuming that the Armed Forces continue in their primary function of war

fighting then personnel will be exposed to trauma and stress. Some of those exposed will develop psychological distress as a result. Even if this can be reduced by training and so on it is nonsensical to argue that it could ever be eliminated. Although modern armed forces are as often engaged on peacekeeping duties and humanitarian missions as they are in combat duties, all such operational duties are associated with an increase in exposure to potentially traumatic events. Whilst we know that psychological distress cannot be prevented it can be better managed and modern psychosocial management of traumatic stress is now much improved and reasonably effective[4]. However there is an important barrier, the nature of military culture, which often prevents those who need help, and for whom help is available, from seeking it. In the recent PTSD case successfully defended by MOD, it was clear that MOD could not be expected to prevent PTSD[5]. It could be expected and does make services available for those in trouble. But where there was a deficiency was the existence of barriers that impeded some people from coming forward and admitting to difficulties. The main aim of the Trauma Risk Management (TRiM) project therefore is neither to prevent PTSD, that is probably impossible in a military organisation, nor to treat it, that is the function of Defence Medical Services. The TRiM system is about a culture change at the grass roots level so that people accept that stress is an inevitable part of military service, that it is not anything to be ashamed of, is not per se a professional mental health problem, and that coming forward and seeking the help that is available (from padres, colleagues, RMOs and others) can be done without shame.

Unfortunately most of the post traumatic incident psychological management interventions to date have adopted a medical model with a mental health professional or counsellor previously unknown to those involved delivering the intervention. It could be argued that this approach may encourage the development of difficulties in some individuals, is likely to be met with resistance by some individuals and might pathologise a normal reaction which is part of the natural recovery following a major traumatic event. In an attempt to address these issues, at the instigation of the Royal Marines, a traumatic stress management system known as Trauma Risk Management (TRiM) has been developed.

AN OVERVIEW OF THE TRIM SYSTEM

TRiM is a proactive post traumatic peer group delivered management strategy that aims to keep employees of hierarchical organizations functioning after traumatic events, to provide support and education to those who require it and to identify those with difficulties that require more specialist input[6]. Within the Royal Marines, TRiM practitioners are embedded within all units and after traumatic events they ensure that the psychological needs of personnel involved in the event are assessed and managed. Practitioners are non medical personnel in junior management positions who have been trained in the system. Anecdotal evidence suggests that it is well accepted and achieves its aims of improving psychological wellbeing and the theory and practice of the system has been published in a known peer reviewed occupational health journal[7]. TRiM appears to be good practice and experts in the field of traumatic stress have stated their supportive view in the scientific literature.

TRiM training aims to equip non medical personnel to manage the psychological aftermath of a whole incident. The training covers a wide subject matter including psychological aspects of incident site management, how to plan for personnel's psychological needs after an event, how to conduct a semi structured risk assessment interview and how to conduct basic psycho educational briefings. TRiM personnel are also taught how and when to liaise with managers and medical/welfare staff. The TRiM course is a combination of didactic teaching and role play. TRiM training has been ongoing within the Royal Marines Command for the last 7 years and the training course has been assessed by Cranfield University and Ed Excel as being of good quality. Negotiations with Ed Excel have recently been completed and those who have completed TRiM training will be eligible for a BTEC professional award in Trauma Risk Management after completing a minimal amount of additional written work. Thus the training program has been externally validated from a number of sources.

THE TRIM TRIAL

To date there has not been any scientific

evaluative data published to determine if TRiM is effective. This is required before it can be confidently recommended for more widespread use within the armed forces. In order to determine its effectiveness a randomised controlled trial of peer group risk assessment versus standard care is being undertaken. The aim of the trial is to show if TRiM can have a beneficial or at least not detrimental effect on organisational culture and organisational functioning without causing psychological harm to those within the organisations that use the system. Culture and attitudes are difficult to study using standardised questionnaires as they are subsumed within a person's personality and psychological motivational factors. However by enquiring about several attitudes and asking semi structured questions about how people might hypothetically behave given a standardized set of circumstances it is intended to gain a measure of unit culture which is required to assess what effect TRiM has upon it both before a unit receives TRiM training and after 18 months. There is literature to support the concept that organizational culture has a significant influence upon organizational stress levels and the organizational response to stressful events.

CINCFLEET's Fleet Management Group has directed that a substantial evaluation into the effectiveness of TRiM is undertaken. Numerous non naval military units have also expressed an interest to receive TRiM training and as such the MOD has agreed to fund the study and the King's Centre for Military Health Research at King's College London has agreed to conduct the trial.

STUDY AIMS AND HYPOTHESES

The study has three main aims:

1. To determine the cultural change within the units that have implemented the TRiM training. In particular the study will examine units' attitude to stress, mental health problems and how they are managed using visual analogue scales. The study will also make use of individual interviews using qualitative research methods with a representative sample of personnel at all rank grades. The study will test the hypotheses that providing TRiM training to a unit will raise both stress and mental health awareness and in doing so reduce the stigma attached to mental health problems thereby making it easier for those in need of help to come forward.

A positive change in culture would be an important outcome to measure as a 'lessons learned" paper produced after the recent MOD PTSD court case directed that MOD needed to address cultural issues in order to continue to meet their duty of care requirements that exist under common and statute law".

2. To determine the effect of implementing the TRiM system on the occupational health and occupational efficiency of the receiving units by the following methods:

- Use of an Attitudes to Stress Schedule (ATSS) questionnaire before randomisation to TRiM training or control groups and again at 18 months.
- Measurement of occupational efficiency indices including disciplinary offence rates, PVR and AWOL rates and medical and psychiatric referral rate.

The use of these measures will test the hypothesis that TRiM training (and the associated hypothesized improvement in organisational culture) will have a beneficial effect upon organisational stress levels and an improvement (or at least no deterioration) in other important indices of occupational functioning.

3. To examine psychological morbidity generally and specifically following traumatic events by assessment of the change in scores on the following scales from baseline to 18 months after the introduction of TRiM using:

- PTSD checklist[10] (17 item version)
- General Health Questionnaire[11] (12 item)
- AUDIT (4-item version)

The use of these measures will test the hypothesis that the mental health of units that have received TRiM training will either improve or not deteriorate. This is an important measurement as one of the major criticisms of psychological debriefing is that it can and does cause harm to those who are subject to it.

STUDY METHODS

The study is a cluster randomized parallel group controlled trial comparing the efficacy of TRiM

versus standard care in the management of individuals following traumatic events. The study will use both quantitative (questionnaire) and qualitative methodology. The control group is essential because as yet there are no definitive studies which suggest an effective method of organisational personnel management after traumatic events. Since the cessation of the routine use of single session psychological debriefings within the Armed Forces military units have made use of whatever support that they think is necessary and is available. This is likely to include medical, welfare and chaplaincy systems which can be called on as required. However as yet there are no proven military post incident protocols available that provide satisfactory post incident personnel management.

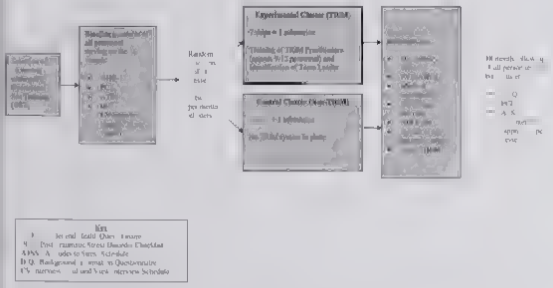
The study protocols have been ethically approved by the MOD(N) Personnel Research Ethics Committee.

PROCESS

It is intended to include 16 vessels in the trial and they will be a combination of ships and submarines. Although the study has the full backing of CINCFLEET the research team will seek to gain the agreement of the Commanding Officer before conducting the necessary questionnaire surveys and 1:1 interviews. All participation in the study at an individual level (filling in questionnaires, 1:1 interviews, and attending a TRiM training course) will be voluntary and informed consent will obtained. [Insert Table 1 here]

Surveys will be conducted on all 16 vessels and subsequently 8 of them will have sufficient personnel trained up to ensure that the vessel has a fully functional team onboard. During the exercises (including FOST) and after any real events the TRiM system will be used in vessels who have trained teams onboard. Both groups will have access to the current post incident management strategies which are likely to include the divisional system, the medical system (including possible liaison with military psychiatric services) and the use of welfare/chaplaincy services as available and as requested.

The study has the backing of CINCFLEET's



The TRiM Cluster RCT Study

Personnel Division and the Fleet Management Group based at HMS Excellent Portsmouth. Currently even if full implementation into the fleet was undertaken without the information that will emerge from this trial then due to a sparsity of TRiM trainers the process is likely to take between 1 2 years. Thus the study will capitalise on the window of opportunity due to the training time lag. The intention will be to ensure that if TRiM is shown to be effective then most RN units will eventually have teams embedded.

Once the baseline measurments are taken a ship can then be trained and use TRiM if it is in the active arm of the study. For both active and control groups ongoing data capture will be required to examine occupational functioning. This will include measurement of the medical/psychiatric consultation rate and rates for PVR, AWOL and disciplinary offences. It is also intended to make use of other occupational functioning indices such as the exit interview proformas which are in use for personnel who have decided to leave the services.

STUDY RISK ASSESSMENT

It is possible that if the awareness of stress related matters is increased then this may adversely affect morale and occupational functioning. Although it is considered unlikely there is of course the potential for personnel who are more "stress aware" to increasingly report of the psychological symptoms of distress and suffer with an associated decrease in day to day functionality. Persons at risk of suffering harm are those who fill in the questionnaires associated with the trial or are educated or risk assessed by one on the TRiM teams if in the intervention group.

A literature search and discussion with experts in the field (including Professors Wessely and Dandeker at King's College London) did not reveal any substantial evidence that filling in questionnaires alone results in significant alteration of a subject's mental state. Indeed every patient that comes to a Royal Naval department of community psychiatry is asked to fill in at least 4 questionnaires as part of their clinical assessment by a Service psychiatrist and to date there has been no suggestions made that this practice has resulted in harm to patients who will not have actually seen a psychiatrist when they fill in the questionnaires. The risk that those involved in the TRiM intervention group will suffer harm (in the form of an increase in psychological distress) is one of the primary outcomes that this study aims to measure. Thus if clear harm arises from the TRiM process (and the study intends to measures unit functionality as an ongoing matter) this will be important and the study will be suspended. Expert opinion is that the risk of harm from this is low and there is emerging evidence from the USA* that psychological educational programs actually improve unit measures of psychological well being.

Therefore although there is the potential for subjects to suffer harm the risk of this occurring is thought to be low.

CONCLUSION

TRiM is an innovative system of peer group traumatic stress management which if found to be effective is ideally suited to use within the Armed Forces. It aims to reinforce good man management strategies and signpost the few who require it to receiving early help. Currently most military units do not have a dedicated post incident personnel management system and there is ample evidence to suggest that military personnel feel great difficulty in asking for help even if they require it. By using peer TRiM practitioners rather than professionals with a health or welfare background it is anticipated that the stigma around traumatic stress and its associated problems will reduce. The regular exercising of the TRiM system in units should additionally ensure that all personnel are more cognisant of the effects of traumatic stress and what can be done about it.

The study presented in this paper represents the first Randomised Controlled Trial ever conducted in relation to mental health in the UK Armed forces. Personnel are often quoted as being the military's finest asset and it is noteworthy that the funding for this study has come from the MOD and the Research Acquisition Organisation. Whatever the outcome of the TRiM trial the support and funding for the study from the "centre" has to be taken as a promising sign that personnel issues are indeed taken seriously which cannot be a bad thing.

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Historical Reflections on Mental Health at Haslar 1753 – 2003

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Men learn from history only that men learn nothing from history **Hegel (1830) requoted by Liddell-Hart (1938)**

This harsh assessment of our ability to retain the lessons of the past seems to ring true for military mental health with the lessons of the wars of the last century apparently forgotten in the times of peace between them The process of forgetting is often an active one, and in the field of mental health is probably aided by negative cultural attitudes This article reveals that mental health issues have in fact been testing military clinicians and social pioneers for a lot longer than since the turn of the last century when it has been assumed that military psychiatry was born during the Russo Japanese war

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The Royal Navy has an established tradition of assisting those with mental difficulties Sir Francis Drake and Sir John Hawkins expressed an interest in the welfare of their sailors The Chatham Chest was established in Elizabethan times for this purpose Naval employees contributed 6d a month to the Chest in the early years and over the next two centuries the deduction from wages rose to £6 per annum per man and this only ceased in 1829[1] In London Hoxton House was established with Chatham Chest funds in 1695 as a hospital specifically to treat Royal Naval and government employees with mental health problems

Private facilities were engaged too Unfortunately the Admiralty found that costs for admitting patients for instance to Bethlam ran at £4 12 shillings per man per year and therefore this became unwieldy They also found everything was done at cheapest rates and men in appalling inadequate conditions and a major concern was the control of strong liquor For instance although officer patients had a ber each ratings could be found 4 to a bed and in Bethlam there were only 2 staff for 126 patients

On the opening of Haslar in 1753 psychiatric patients appear to have been dispersed throughout the hospital Haslar opened with 258 patients 128 of which where considered incurable During an inspection visit by John Howard (a prison reformer in the 1770s) he commented on the good care of patients highlighting the standard of hygiene sanitation and ventilation and he recommended others come and visit and see for themselves[4]

Between 1758 1802 various well established Haslar personalities showed an interest in the welfare of those with mental problems James Lind (1758) Gilbert Blane (1780) and Rear Admiral Garrett (1802) who is recorded as saying "a seaman who had lost his reason in the service of the crown should receive love and attention on a scale not less than a seaman who had lost a limb in the same cause

Few observations in the early years were made and there is little in the way of medical notes on individual patients Treatments at this time included blood letting purgatives douching in ice cold water and a gyration chair that rendered a patient unconscious Syphilis was treated with mercurial ointment until the patient drooled (a side effect of mercury poisoning)[5]

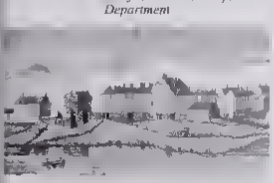
The building of a specific psychiatric unit in 1818 the Royal Naval Hospital Haslar coincided with major refurbishment work in the main hospital Accommodation in what is now C block followed the sterling effort of Dr John Weir in 1812 who argued, "it should be the boast of a generous nation to provide for those deprived of their intellect whilst employed in the service of their country" He argued that i

world cut the cost of running Hoxton by half. Attention to budgetary concerns is by no means a recent development.

In 1820 Capt Charles Craven was replaced by RAdm Garrett. He took the lot of lunatics seriously. he introduced hot meals for them and ordered that the bedding (hair) be washed at least once a year[1].

Activities in the hospital were varied and extensive. airing grounds were provided for recreation and access to fresh air. Patients were known to have paraded in the arches and taken their smokes here[2]. Two summer houses were erected on mounds to facilitate views of the Solent and Spithead to encourage a wish to return to sea. One still stands in the grounds of G block.

1897. Haslar inpatients take the air in the extensive airing grounds which included two summer houses and an mounds allowing views of Spithead, Isle of Wight and Southsea Beach. Courtesy of RH Haslar Graphics Department



Early drawing of RH Haslar circa 1750. Courtesy of RH Haslar Graphics Department

Chloral was in use by the [illegible] in all restraint for aggression, irritability and even masturbation. The constipation it caused was treated with turpentine enemata twice a week. By 1838 118 patients were admitted in the asylum. Treatments included cold & tepid baths, application of leeches (to the temples), blisters, cupping, purgatives and catharsis.

Patients were encouraged to grow vegetables and fresh fruit to supplement their diet, being allowed to sell surplus produce in an effort at rehabilitation as well as to supply the hospital.

A boat was placed at the disposal of Dr Anderson and lunatic crews rowed out to Spithead in order to fish. They caught whiting, conga eel, sole and plaice. It was noted that a patient who had been mute for 7 or 8 years began to count his catch. In 1839 Robert Gardiner advocated a non restraint movement along lines of the work of Tuke and Pinel. This was encouraged by Sir John Richardson who became Chief Physician in 1838.

In 1828 it was recognised that the strain of war increased the number of inpatients. By 1844 such were the numbers that Great Yarmouth hospital was also employed for the care of naval lunatics and from this period patients appeared to have been shared. The journey between the two by coach and four could take up to 8 days in good weather and nutritional balance of patients needed to be ensured before they undertook such an arduous journey. At this time almost all Haslar was given over for the care of lunatics.

A well known RNMS man who was treated at Great Yarmouth was Staff Surgeon William John Maillard Lamons for his bravery in action at Candia, Crete in 1889. Admitted to Great Yarmouth Naval Asylum 1902 he was detained under section 335 of the Lunacy Act on 7 June 1902 and discharged into care of his wife in June 1903. He died a few years later – diagnosis given chronic diffuse meningoencephalitis and epileptic seizures (most likely he had a brain tumour). His death certificate cites "Severe mental strain at war in Crete 1898".

William Mcleod in 1866 conducted some research examining brains and spinal cords of 100 patients coming to the conclusion that there was an organic cause for insanity. He also

argued that hereditary taint made people vulnerable under extreme stress. He blamed poor recruitment and selection processes for the increase of patients in the Royal Navy.

By 1870 it was noted that patients were constantly hungry at night and consumed pieces of cloth. When one patient almost asphyxiated, it was decided to introduce evening comforts of bread, milk and cocoanuts which solved the problem and also halved the usage of chloral medication (the start of 9 o clockers).[8]

At this time it was also noted that causes of insanity where put down to psychological trauma, overwork, anxiety, intemperance, physical trauma and venereal diseases.[9] In 1879 the Admiralty attempted to reduce those admitted for treatment and stipulated that only career men were entitled or those entitled to a pension could be treated. On retirement, only those whose condition could be seen as attributable to their service were readmitted for treatment.[9]

Treatments at this time continued to include cold baths and cold lotions to the head, tonics of cod liver oil, strychnine, Bromide (for fits) and galvanism. Delirium Tremens was now treated with opium (in a tincture of capsicum in cinnamon water). A Dr Clayton in 1884 noted that whilst there were 167 patients the use of sedatives or restraint was extremely low he put this down to basic naval discipline. At this time he also prohibited alcohol to patients with general paralysis of the insane.[9]

Also in 1884 a Dr Charles Lockhart Robertson noted the problem of "feigned insanity. He found that insanity being a chief reason to obtain a discharge from the armed services or to avoid punishment". Diagnosis was difficult and the only way people could be certain if a patient was mad or not, was through prolonged observation or if the person character was well known. This problem of T U or temperamental unsuitability was seen "as the greatest exercise of a physician's knowledge and tact required during a service career, a problem which still requires serious consideration".[10]

By 1910 it was necessary to build N block (now G block). This was a closed ward specifically for officers or those requiring containment. It offered two 12 bedded wards with a padded cell and staff accommodation.[4]

Just prior to this officer patients requiring containment had been transferred to the Royal Victoria Hospital Netley. By 1912 patients requiring to be certified under M H A provision by two medical officers would also need approval by the Admiralty in order to be transferred to the Great Yarmouth Naval Hospital.[12]

Throughout the period it is noted that patients who leave naval facilities often comment that they wished to be returned to naval care. A comment made previously by William Mcleod in 1866 "the patient received into an establishment where he is surrounded with officers and men of his own profession and attended by medical officers well acquainted with all the peculiarities of the seamen. Officers and seamen without exception prefer to be among their own and are happier under the routine and disciplines peculiar to the naval service".

The 1930's and 1940's were an age of great expansion of treatment in psychiatry. Some were rather crude e.g. Malaria therapy for syphilis. Development of electroconvulsive therapy various electric innovations (Torpillage) insulin coma therapy and finally in the 1950's the development of the neuropsychotic drugs starting with Chlorpromazine and then the tricyclic antidepressants.[4]

By 1931 the Admiralty was working within the mental health act and has the right to detain patients but this was legally questioned on a regular basis. This facility was removed in 1959 with the enactment of the Mental Health Act. In 1980 Lord Eunals re confirmed this decision on 2 grounds

1. To avoid claims of detaining personnel on political grounds (as in U S S R)

2. M O D control of beds would have been lost to that of the ministry of health and law courts affecting staff availability for short notice deployments.[9]

In 1936 there were 212 patients in the asylum 25 Officers and 187 Ratings. At that time the total Naval population was just over 92 000. A diagnostic breakdown was as follows. Manic Depressive Psychosis 25, Dementia Primary 99, Dementia Secondary 9, Dementia Senile 11

General Paralysis of the Insane 10 Delusional Insanity (Systematised) 12 Delusional Insanity (Non systematised) 35 Other forms of Insanity 11[8]

In 1939 in terms of war effort patients in Haslar were organised into work parties and helped out in local farms It was also necessary during this period to annexe two wards in Knowle Hospital for the care of 50 male patients Female patients were dispersed throughout the country

Again part of the war effort there was necessity to look at recruitment issues and a book written in collaboration with the United States entitled Psychology Of The Fighting Man (1943) was highly recommended for commanding officers by MDG(N) Dudley and considered psychological aspects of man management The selection process at this time again came into question and it was found that a common medical interview looking at an individual s psychological history particularly their mental stability would be adequate rather than expensive IQ tests and specific psychological screening which was seen as far too expensive[9]

In 1951 the average bed occupancy was numbered between 60 and 70 New cases admitted in 1951 numbered 565 This suggests relatively short admissions on average In that year there was a general nursing inspection of Haslar in order to give approval for male registered mental nurse training This was approved on the proviso that 6 months of their training was undertaken within the NHS[9]

In 1955 Great Yarmouth naval hospital closed going into the care of the NHS All those patients considered recoverable for service were returned to the Royal Naval Hospital Haslar

In 1962 in the light of major refurbishment in the Royal Naval Hospital Haslar all naval psychiatric inpatients were removed to the Royal Victoria Hospital Netley which became a tri service Army & RN inpatient facility It had Mental Health Act approval and therefore training for both medical staff and nurses At that time all outpatient facilities remained in both Haslar and Victory Barracks and by the 1970 s was re-housed in the base of C block[10]

By 1978 inpatient care for naval patients was returned to Haslar occupying Z blocks These were two 2 storey blocks offering 17 beds 10 male 5 female and 2 single cabins outpatient and day patient centre Facilities for occupational therapy occupied C block

Initially it was perceived that inpatient treatment would be on a short term basis of 10 days only any care beyond this period would be transferred to the NHS This in fact was proved to be impractical and never occurred Recent outsourcing of inpatient care to the Priory Group planned to restrict admission length for a similar period This is also proving too short a period[11]

Within a very short space of time such was the pressure on local beds that Haslar acted as the regional mother and baby unit requiring employment of a part time midwife

1979 saw the first Royal Naval trained community psychiatric nurse this was a chief petty officer

Unfortunately in 1985 the beds in Z block were again closed and the patients removed back home to what is now G block This offered 17 beds 9 male 6 female and 2 single cabins (initially seen as officer cabins but used for distributed patients) The alcohol treatment unit was housed in one of the Z wards

1986 Haslar saw the first cognitive behavioural therapist trained in the three services

By 1987 the beds for the Royal Naval inpatient facility in Haslar were closed This meant that all inpatients were removed to the Royal Air Force hospital at Wroughton and then latterly at Catterick the loss of beds in Haslar resulting in the removal of nurse training status on 19 August 1987 The outpatient and day patient facilities remain in G block The Alcohol Treatment Unit eventually moving to the Fort Blockhouse

Following the closure of beds in Haslar in 1987 it became obvious that a treatment programme was required for post traumatic stress disorder and treatment groups started in 1987 This innovative treatment programme was collaboratively devised by Surg Capt Morgan O Connell Miss Ros Fortune Psychologist Miss Jan Beach Cognitive Behavioural Therapist and Mrs Lines

Occupational Therapist. It generated official academic and media interest. A number of documentaries were produced. Between 1987 and 1999 53 groups were conducted treating 250 patients. Whilst this occurred patients were housed in 2 flats in Rowner and a concurrent support group ran alongside for their family and friends.

Currently the Royal Navy Mental Health Service offers an outpatient and a day care centre running forenoons with individual counselling sessions available in the afternoon. Additionally we run an active alcohol treatment centre have a resident psychologist and a full time social worker from Naval Personal & Family Services and can offer additionally EMDR and cognitive behaviour therapy sessions. Peripatetic clinics run from most outlying establishments conducted by both CPN's and naval psychiatrists. On duty staff are also available to give guidance and support to the executive and ships at sea. The staff at all grades are engaged in educating the Fleet on management of psychological casualties and matters relating to stress management. Additionally we support TRiM which is a trauma risk management organisation set up by the Royal Marines.

Whilst we are constantly reminded that one of the only constants in life is change it seems clear from this dip into some of the history of Haslar and Naval mental health provision that change is often circular and the same problems beset our forefathers that beset us today. Whilst we engage in yet more change and innovation let us not forget some of the lessons of history!

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The Psychological Morbidity of Military Healthcare Workers

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KEYWORDS
Health Personnel
Military Personnel
Psychological Disease

ABSTRACT

Objective To measure the probable prevalence of psychological morbidity in military healthcare professionals using the General Health Questionnaire 28

Results 21 (35%) of military healthcare workers showed psychological ill health Royal Air Force health staff had a significantly higher prevalence of ill health than both the Army [12 (63%) vs 6 (23%)] and the Royal Navy [12 (63%) vs 1 (8%)] RAF non-commissioned staff were found to have a highly significant prevalence of ill health compared to the Army non commissioned staff [7(70%) vs 1 (7%)] and Royal Navy non-commissioned staff [7 (70%) vs 0 (0%)]

Conclusion The study shows significant differences in psychological ill health between Services at the RCDM Comparison with civilian data showed that the overall prevalence of psychological morbidity was no higher than in NHS staff The elevated level of ill health in the Royal Air Force staff warrants further investigation and possible intervention

INTRODUCTION

There are high levels of both physical and psychological ill health and associated sickness absence among those working in healthcare in the UK Poor psychological health and sickness absence lead to a reduction in both the quantity and quality of patient care Ill health and sickness absence in any one individual is likely to cause increased work and stress for other staff because most healthcare is provided by staff working in teams

Data on doctors being supervised under the voluntary health procedures and on doctors referred to the health committee are collected by the General Medical Council Of the 201 doctors under supervision at 31 December 2000 199 were for alcohol drug and mental related health problems Only one percent were referred for a problem with their physical health Several explanations have been put forward for this high level of ill health including organisational changes and the large volume and pressure of work[4] However it is important to consider that stressors both inside and outside of the workplace contribute to ill health

In 2001 the Royal Centre for Defence Medicine (RCDM) was opened as part of the University Hospital Birmingham It provides secondary and specialist care for members of the armed forces dedicated training for defence personnel and is a focus for medical research The RCDM also offers a facility for the reception of Service patients who have been aeromedically evacuated back to the UK after becoming ill or injured overseas

Military healthcare workers are possibly more vulnerable to psychological ill health compared to their civilian colleagues In addition to the factors mentioned previously all military personnel are subjected to stresses from relocation away from families the possibility of call up and the threat of terrorism There were 20 psychiatric referrals of RCDM staff in a twelve month period a number perceived as abnormally high by RCDM General Practitioners (personal communication AJ Leach November 2003)

[illegible] work related psychological ill health in military healthcare workers and to compare this with civilian healthcare workers the published literature was searched for similar studies Three electronic databases were used Medline (1996-2004) Embase (1988 2004) and the Cochrane Controlled Trials Register (Issue 1 2004) These were searched using key words in three categories health personnel military and psychological disease Secondary references were chosen from the primary paper references and by contacting academics researching this area Abstracts were selected for review if they were judged to include information on psychological disease in health personnel in the UK

Many studies were found examining psychological ill health in healthcare workers A systematic review of the literature up to 1999 summarised eleven observational studies showing associations between work factors and ill health in healthcare workers in the UK[1] It shows that factors associated with psychological ill health in healthcare workers are long hours worked high workload and pressure of work lack of control over work and lack of participation in decision making Although these factors are found in many professional occupations doctors exhibit higher levels of psychological disturbance due to the nature of their work[2] and the fact that they are less likely to take short periods of sick leave In addition there is a general perception among doctors that stress is something they have to learn to live with and often rely on self medication or informal consultations with colleagues when faced with challenges to their psychological health[3]

The most common reason for doctors to take early retirement is psychological ill health[4] Doctors are often found to suffer from depression alcoholism and anxiety neuroses (including post traumatic stress disorder obsessive-compulsive disorder phobia and panic disorder) Having a mental illness is associated with stigma so sick doctors may not wish to accept that they are ill due to concerns about their fitness to practice or losing the respect of patients

Among nurses workload pressures are the commonest reported source of psychological ill health Other factors include relationships with other clinical staff poor leadership coping with death and dying shift working and lack of reward[5]

Compared to healthcare workers in general there was a paucity of literature available concerning military healthcare workers in the UK Outside of healthcare military personnel are significantly ($p<0.001$) more likely to report suffering from job stress compared to civilian workers with 26% of those studied reported having significant work stress A study comparing United States Navy nurses with their civilian counterparts showed that military nurses were significantly more satisfied with issues of pay and fringe benefits whilst civilian nurses reported significantly greater job satisfaction peer cohesion supervisory support decision making autonomy task orientation and opportunity to be innovative No difference was found between the two groups for measures of burnout and morale Some of the main attractions of military service are fringe benefits such as educational and travel opportunities higher starting salary and earlier retirement However decision making in the military may suffer due to the rigid hierarchical work environment Most decisions are made by those with higher rank Since staff nurses enter the military at the lowest officer rank this limits their decision making power and opportunities to be innovative

Military healthcare workers suffering from burnout and job stress are affected by the same factors as civilian healthcare workers[6] No studies exist in the UK comparing these two groups to examine the prevalence of psychological ill health Our novel study examines one of these groups in a new integrated medical facility with the intention of further investigation in light of the results

AIMS AND OBJECTIVES

To measure the probable prevalence of psychological morbidity in military healthcare professionals at the Royal Centre for Defence Medicine Birmingham and establish if it is similar to that of civilian professionals as demonstrated by the current medical literature. This will allow us to answer an important clinical question about the current health of military medical staff and could prompt a more thorough investigation across the military medical services

SUBJECTS AND METHODS

After an extensive literature review and discussions with the RCDM military GP (JL), it was decided that the subjects should include all qualified personnel from the Royal Navy, Army and Royal Air Force currently based at RCDM in Birmingham. Individuals were drawn from the nursing professions, doctors and the allied health professions (excluding Military Medical Assistants). Student nurses were excluded as it was felt that students would have different life stresses to those of qualified personnel. A list of the 171 people who met these criteria was obtained from RCDM Headquarters and included 30 (17.5%) RN, 76 (44.5%) Army and 65 (38%) RAF personnel. Using random number tables, 100 subjects were selected and assigned a unique identity number. This random sample consisted of 22% RN, 42% Army and 36% RAF staff of which 40% were officers overall (Table 1).

Table 1 – Number of subjects in the random sample

Service	All Personnel	% Officers
Army	42	43
Royal Air Force	36	36
Royal Navy	22	41
Total	100	40

The selected sample were sent a postal questionnaire to their workplace through RCDM headquarters and asked to return it in a pre-paid envelope. The 28 item General Health Questionnaire (GHQ-28) was used as it is widely accepted that it is a reliable method of detecting those with a diagnosable minor psychiatric disorder in both general populations and in occupational settings[8,9]. The questionnaire has four subscales: somatic symptoms, anxiety and insomnia, social dysfunction and severe depression and five of the seven items in the final subscale measures aspects of suicidal thinking[9]. High scores indicate that an individual is a probable case of minor mental distress such as anxiety disorders and depression[10]. The questionnaires were marked with the subjects' unique number so that we could maintain a certain degree of anonymity whilst allowing us to resend the questionnaire to non-responders and enable analysis by rank and Service. JL was also considered that he should be able to contact a person who showed a high score on the items regarding suicidal thinking as he has an ethical duty as their general practitioner to intervene in such cases. Respondents who scored on two or more of these five items would be regarded as having significant suicidal thoughts and their questionnaires would be passed to JL for review. Approval from the Officer in Charge, RCDM and South Birmingham Research Ethics Committee was obtained.

The questionnaire was scored using the simple GHQ scoring method (0 0 1 1) as it gives results which are if anything better than the Lickert method (0 1 2 3) when using the scaled GHQ 28 as a screening test[5]. The questionnaires were analysed using both the 4/5 and 5/6 thresholds. The 4/5 threshold gives slightly better overall results than a 5/6 cut-off, however does have a lower specificity, as shown in Table 2[8]. The results were then analysed using the Microsoft Excel and MiniTAB programs.

RESULTS

In the time scale allowed 60% of the subjects responded. 3 (5%) of these had removed the questionnaire identity number so could not be analysed according to their rank and Service but were included in the total figures. A higher proportion of officers returned questionnaires than the average of all commissioned and non commissioned ranks for their Service (Table 3).

Table 3 Response rate overall and among officers

Service	All Personnel	Officers
ARMY	62%	61%
RAF	53%	69%
RN	55%	56%
All	60%	63%

Table 2 Screening characteristics of 28 item GHQ for different cutting scores

Threshold score	Sensitivity (%)	Specificity (%)	Overall misclassification rate (%)
4/5	88.0	84.2	14.5
5/6	80.0	88.8	14.2

Table 4 Mean (Standard Deviation) GHQ scores for each subscale

	A Score	B Score	C Score	D Score
ARMY (n=26)	1.46 (1.79)	1.08 (1.83)	1.23 (2.16)	0.15 (0.46)
Officers (n=10)	1.53 (2.25)	1.83 (2.41)	2.00 (2.73)	0.33 (0.65)
RAF (n=19)	2.11 (2.28)	2.53 (2.44)	1.79 (2.35)	0.32 (0.95)
Officers (n=4)	1.78 (2.44)	2.33 (2.18)	1.00 (1.60)	0.00 (0.00)
RN (n=12)	0.50 (0.80)	0.50 (0.90)	0.42 (0.90)	0.00 (0.00)
Officers (n=5)	0.80 (1.30)	0.80 (1.10)	0.80 (1.30)	0.00 (0.00)
All (n=60)	1.53 (1.99)	1.43 (2.00)	1.25 (2.07)	0.20 (0.63)
Officers (n=25)	1.68 (2.1)	1.81 (2.14)	1.42 (2.18)	0.15 (0.46)

Table 5 Mean (Standard Deviation) and 95% Confidence Intervals for total GHQ score

Service	Total Score	95% Confidence Intervals
ARMY (n=26)	3.92 (5.45)	1.83 6.02
Officers (n=10)	6.00 (7.37)	1.64 10.36
RAF (n=19)	6.74 (6.41)	3.85 9.63
Officers (n=9)	5.11 (4.59)	2.18 8.11
RN (n=12)	1.42 (1.78)	0.41 2.42
Officers (n=5)	2.20 (2.28)	0.20 4.20
All (n=60)	4.42 (5.53)	3.02 5.82
Officers (n=25)	4.96 (5.86)	2.66 7.1

The mean GHQ total score was 4.42 with standard deviation 5.53. Table 4 shows the breakdown of the mean and standard deviation of scores for each subscale. No subjects scored more than 2 out of 5 in the section related to suicidal thoughts therefore none were referred to JL.

Table 5 shows the mean total GHQ score with 95% confidence intervals for each group. Wide confidence intervals in some groups are a reflection of the small sample size.

The average score was significantly higher in Royal Air Force personnel compared to Royal Navy personnel (6.74 vs 1.42, p=0.002). Simple T test analysis of Army vs RAF and Army vs RN was less significant but one way analysis of variance (ANOVA) showed there were significant differences between the three groups (one way ANOVA, df=2, F=3.85, p=0.027).

Table 6 and Figures 1 and 2 show the number and percentage of personnel who scored as a positive case on the GHQ 28 either using the 4/5 or the 5/6 cutting score. Using the lower threshold 21 (35%) subjects were classed as a case.

The Royal Air Force had a significantly higher prevalence of cases than the Army [12 (63%) vs 6 (23%), χ^2 = 7.35, df=1, p=0.0067] and the Royal Navy [12 (67%) vs 1 (8%), χ^2 = 9.08, df=1, p=0.0026]. There was no significant difference between the Army and Royal Navy.

Officers in the Army were significantly more likely to be a case compared to non commissioned Army personnel [5 (45%) vs 1 (7%), χ^2 = 5.38, df=1, p=0.020], however there was no difference in the other Services.

RAF non-commissioned staff were found to have a highly significant prevalence of cases compared to the Army non commissioned staff [7 (70%) vs 1 (7%), χ^2 = 11.06, df=1, p=0.00088] and Royal Navy non-commissioned staff [7 (70%) vs 0 (0%), χ^2 = 8.33, df=1, p=0.0039]. Comparing commissioned Officers there was no significant difference in the number of cases between the Services.

DISCUSSION

Overall more than a third of staff at RCDM scored more than four on the GHQ-28 therefore showing signs of probable psychological ill health. The prevalence of cases was highest in the Royal Air Force with nearly two-thirds of personnel scoring positively and lowest in the Royal Navy. The group with the most psychological stress was Royal Air Force non commissioned staff with a prevalence of 70%. Psychological morbidity was nearly seven times higher in Army Officers than in non commissioned Army personnel. However no such difference was found in the Royal Navy and Royal Air Force.

Although these figures may seem high, a study on civilian hospital consultants, GPs and senior managers showed that 47% scored positively on

Table 6 Frequency (%) of subjects scoring [illegible]

	4/5 cut off				5/6 cut-off			
	All	Officers	Non commissioned		All	Officers	Non-commissioned	
ARMY	6 (22)	5 (45)	1 (0.7)		4 (15)	4 (36)	0 (0)	
RAF	12 (63)	5 (56)	7 (70)		10 (53)	4 (44)	6 (60)	
RN	1 (8)	1 (20)	0 (0)		0 (0)	0 (0)	0 (0)	
All	21 (35)	11 (44)	10 (29)		15 (25)	9 (36)	6 (17)	

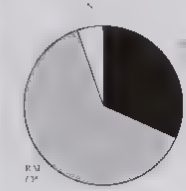

Figure 1 Percentage of GHQ [illegible] (5/6 cutoff) by Service and rank

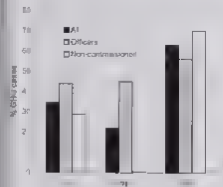

Figure 2 All GHQ cases [illegible]

GHQ 28 using a 5/6 cut off[8]. A cut off of 4/5 would show even greater ill health. Using results from our study only a quarter scored more than five suggesting a far lower prevalence in military staff. However among RAF personnel 53% scored more than five which is comparable to the civilian study. Officers across the three Services had a prevalence of 36% (at 5/6 cut off) which is lower than the GPs and consultants in comparable group with the exception that commissioned ranks include nursing officers and training grade doctors).

A national survey showed the prevalence of neurotic disorders in the adult population to be 17%[9] and in the general population of the East Midlands 26.8% would be expected to score positively on the GHQ[8]. Other studies have shown that the prevalence of psychological morbidity in healthcare workers ranges from 18% to 30%[10-13]. However these studies use versions 12 and 30 of the GHQ which although similar to GHQ 28 means that the results cannot be compared.

The major weakness with this study is the small sample size. This was due to both a small population and the low response rate. The population is obviously dependent on the current size of the RCDM and the response rate of 60% compares favourably to other postal questionnaire studies[8]. It is likely that repeat mailings would have increased the response rate. As with questionnaires of this type the study is liable to responder bias and prestige bias (i.e. subjects give answers which make them feel better). The data may not be generalisable as it is unknown if these are specific to military health staff at the RCDM or are the same across the military medical services or the NHS. However there is no reason to suspect that the RCDM staff are different to those who are deployed or serving in other units. Strengths of the study were the brief yet informative questionnaire used which could be completed in a short period of time, maximising response rate and random sampling avoiding selection bias.

The study is significant as it highlights an area of clinical and political importance in the armed forces medical services for which there is no current evidence. High levels of psychological ill health leads to a reduced skill level with a greater number of personnel leaving the service or taking earlier retirement. In more stressful

situations such as when deployed during conflicts or intensive training operations the prevalence of ill health could increase which has the potential for direct impact on military operations

There needs to be further research both in other military units and using NHS staff as comparisons In order to discover reasons why there could be such a difference between people doing the same job in the same place but wearing a different uniform further investigation of work and social factors is needed A cohort study of military and NHS staff matched for age sex and occupational group could be used to analyse sociodemographic and stress variables associated with psychological ill health

It has been suggested that lowering stress or improving communication in the workplace can reduce ill health Intervention studies have shown that stress management sessions and communication training significantly reduce absence due to ill health and changes to the support and training structures within the armed forces could prove of benefit. Many of the work related variables associated with high levels of psychological ill health are potentially amenable to change[6] This would represent primary prevention (reducing sources of psychological morbidity) rather than secondary prevention (training individuals who already experiencing work related stress to cope with such pressures) In a time of increasing difficulty in recruitment and retention in the military medical services it is essential to discover the problems and implement solutions

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Clinical

In-hospital Prevention of Cardiac Arrest

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Cardiac arrest is a relatively rare but dramatic event in hospital usually resulting in an unsuccessful outcome. Recent work by Colonel Professor Timothy Hodgetts L/RAMC of the Royal Centre for Defence Medicine and his colleagues described the incidence and outcome of cardiac arrest in one hospital Frimley Park Hospital Surrey[1]. They found that the rate of cardiac arrest was 118 per 1,000 hospital admissions with a survival rate of 10%. Most worryingly perhaps they found that around two-thirds of cardiac arrests were avoidable and that appropriate action by hospital staff could have prevented them. Avoidable arrests were caused by

- Absent or inadequate response to laboratory findings
- Delay by nurse to inform doctors of vital signs or deterioration
- Delay by doctors to respond
- Delayed or incorrect diagnosis
- Inadequate management of deteriorating health

Avoidable arrests were 12 times more likely to occur when the patient was admitted in an inappropriate clinical area (ie a ward not related to the main presenting complaint or one where critical care was not available). In an acute hospital setting whether NHS or military it is important that we learn to prevent avoidable deaths and these findings are therefore important. Several systems have been developed attempting to optimise the response to possible cardiac arrest and minimise avoidable arrests. These include Medical Emergency Teams (MET) who respond to scoring systems based on observed signs symptoms and investigations. These systems have not been based on evidence of their predictive value nor have they been subject to evaluation. Hodgetts and his colleagues therefore aimed to develop an evidence based scoring system for activating METs in hospitals based on their epidemiological research[1]. This compared the recorded levels of several physiological risk factors between those who had had a cardiac arrest and some who had not. The findings of this study were augmented by the opinions of an expert panel and the addition and weighting of other risk factors for the development of a graduated response based on the score which ranged from further observation of the patient through fast bleeping of the patient's SHO to activation of a Medical Emergency Team (MET).

During the Continuous Training Period for the Royal Naval Reserve (RNR) Medical Branch in September 2004 at Queen Elizabeth Barracks Strensall we were privileged to hear a lecture by Colonel Hodgetts in which he presented his research and the system he had developed for in-hospital prevention of cardiac arrest. He demonstrated an impressive collection of CD ROMs and associated literature with which he has disseminated this system to every hospital in the country. He advocated its routine use in all military hospitals.

At a subsequent academic meeting of RNR medical officers we took the opportunity to review this research and consider its application in practice. We raised some points which probably merit further discussion and debate. We agreed that the research had many strengths and was timely. However there are limitations to the study and to the subsequent development and application of the scoring system. The study was a small retrospective case control study based on about 118 people who had had a cardiac arrest and in whom resuscitation was attempted. Controls (1132) were sampled randomly from patients who were on acute wards on the same day as the cardiac arrests.

Case-control studies are appropriate to examine the aetiology of rare clinical events but have disadvantages These include a high risk of recall bias an inability to examine the prevalence of outcomes of risk factors and perhaps most importantly risk of selection bias and confounding caused by a control group that is not directly comparable to the cases In this example although the controls were similar in both age and sex to the cases there were no other reported attempts at comparison It is likely that the controls were a healthier group of individuals generally than the cases (and indeed this was borne out by subsequent events[9]) Only if the controls had included a similar prevalence of high risk acute illness would they have been representative of the population which produced the cases Cases included those in critical care while controls did not and therefore direct comparison was inappropriate The paper reports neither the time interval between the recording of abnormal variables and subsequent cardiac arrest nor the level at which any of them was considered abnormal Many of them may have been present for several hours or even days before arrest and may have been effects of an underlying pathological or incidental process One of the risk factors was nurse/doctor concern surely particularly sensitive to recall bias yet given high weighting in the scoring system leading to activation of a clinical response

The expert panel generated the scoring system by combining the evidence from this study with their own experience and a response was suggested after reasonable analysis of its operating characteristics Although this response is aimed commendably at reducing inappropriate activation of the MET while maximising the value of actual activation we believe that it may still be too sensitive For example a score of 5 results in the patient s SHO being "fast bleeped Note that nurse concern" accounts for a score of 2 Therefore a nurse who finds a score of 3 based on other observations and who wonders how to respond must by definition add his or her concern to make a total of 5 A reasonably healthy individual with for example a pulse rate of 60 per minute and a haemoglobin of 100 g/l (we assume – the units of measurement are not actually quoted) will find himself the target of a spinning and anxious SHO This will result in devaluation of the "fast bleep" system and a cohort of disgruntled SHOs A calmer more rational approach based on clinical rather than numerical assessment is likely to be more appropriate for all

This study and subsequent scoring system represent an important move towards an evidence based approach to the saving of lives in critical hospital situations However there may be further work required before its widespread adoption can be supported This might include prospective observational studies involving larger samples and more hospitals in which the prevalence and timing of the development of observed risk factors can be assessed It should also include qualitative research on the stakeholders involved in the process doctors nurses and of course patients A multi centre cluster randomised controlled trial may ever need consideration Cardiac arrest leading to resuscitation is a relatively rare phenomenon in the NHS (affecting only 118 of 32 341 admissions in one year (0 36%)) yet the clinical resources and opportunity costs deployed in the implementation of this system are considerable Health economic evaluation is therefore also important and we urge the Royal Naval Medical Services at least to consider this very carefully in their review of Colonel Hodgetts recommendations

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Patients' Perception of Military Doctors in Fracture Clinics

– does the Wearing of Uniform Make a Difference?

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KEYWORDS
Attire fracture clinic patients perceptions uniform

ABSTRACT
We performed a study during our Trauma Week when patients who were referred from the accident department with fractures were reviewed in our fracture clinic. During our Trauma Week Mister Thomas Consultant Orthopaedic and Trauma Surgeon or Surgeon Lieutenant Commander McLean Specialist Registrar in Orthopaedic and Trauma Surgery reviewed a total of 93 patients in fracture clinic. All patients were given an anonymous questionnaire regarding their perceptions of their attending clinician. 77 were completed. Forty nine questionnaires regarding Surgeon Lieutenant Commander McLean and 28 regarding Mister Thomas were available for analysis. During the Trauma Week all patients were seen in the same location in identical vehicles by either of the two clinicians. Consultations were typically brief lasting about five minutes. Throughout the week the clinicians one military and one civilian wore differing attire. The military uniform comprised Royal Navy number four action working dress. The civilian attire comprised (dog robbers jacket shirt with tie and smart trousers). The hypothesis tested was that the use of military uniform might affect patients perceptions of their attending clinician. Our results appear to demonstrate that the attire of the attending clinician does not adversely influence patients perceptions of their attending clinician.

INTRODUCTION

Our institution is a MoD District Hospital Unit (MDHU) consequently in addition to the normal complement of hospital staff there are also medical nursing and technical staffs from the armed services. Much is written about medical consultations particularly in the realms of primary care however there is less literature regarding secondary care. Factors affecting patients perceptions of their doctor in the confines of a medical consultation are not fully understood and little research has been undertaken regarding consultations with orthopaedic and trauma patients and none regarding uniformed consultations with civilian patients. We decided to explore the role of uniform and dress to see if this might have any affect on patients perceptions of their attending clinician in fracture clinic consultations.

METHOD

We performed our study during a five day period between Monday 29 November and Friday 3 December 2004. All patients attending their first new patient fracture clinic were invited to take part in the study. Either Mister Thomas or Surgeon Lieutenant Commander McLean saw all patients in clinic. During the study Mister Thomas wore dog robbers and Surgeon Lieutenant Commander McLean wore Royal Navy number four action working dress. It was not possible to match our patients so we assumed that the two groups of patients were the same on the basis that they came from the same sample population and they had as much chance as seeing either doctor. All attending patients were given a questionnaire to complete. The

questionnaire consisted of two parts. The first part related to demographic details. The second part contained ten statements. Patients were asked to indicate their agreement with the statements choosing between five options: strongly agree, agree, neither agree or disagree, disagree or strongly disagree. These outcomes were scored 1 to 5 depending on the presumed positive value of the statement. A score of 3 points was given to the option neither agree or disagree. Each questionnaire was evaluated and total scores were recorded. For each statement a statistical analysis was performed using an unpaired t test comparing Mister Thomas' patients' results with Surgeon Lieutenant Commander McLean's patients' results. The statements are shown in Figure 1.

Figure 1
The ten statements patients were asked to indicate their level of agreement with

The doctor who saw me appeared as I expected
The doctor who saw me appeared kind
The doctor who saw me appeared professional
The doctor who saw me appeared to be in a hurry
The doctor who saw me appeared to be smartly dressed
The doctor who saw me appeared confident
The doctor who saw me appeared to be approachable
The doctor who saw me appeared to have a sense of humour
The doctor who saw me appeared to be intimidating
The doctor who saw me appeared polite

RESULTS

Ninety three new fracture patients attended during the five day long study period. Of these 77 returned completed questionnaires. Out of the total of 77 questionnaires 28 were completed by patients consulted by Mister Thomas, the remaining 49 patients had consultations with Surgeon Lieutenant Commander McLean. Respondents included 29 female and 48 male patients. Five patients were from non White Caucasian ethnic origin. Five patients were from the armed services. The respondents' age range was 8 – 96 years, mean age 39 years. All returned questionnaires were analysed. Each response was scored out of five and a total score was derived. Responses were analysed statistically using an unpaired student t test, comparing results from Mister Thomas' patients with those of the patients who were consulted by Surgeon Lieutenant Commander McLean. Comparing total scores between the two groups revealed that overall Mister Thomas' score was marginally higher but this finding was not statistically significant (mean score 44 versus mean score 42.73, P value 0.2224). Comparing the ten statements only two of the ten attracted responses that were statistically significant with Mister Thomas' mean score being greater than Surgeon Lieutenant Commander McLean's for statements one regarding patients' expectations of their doctor's appearance and three, regarding patients' perception of their doctor's professionalism (mean score 4.36 versus mean score 3.98, P value 0.0161 and mean score 4.68 versus mean score 4.33, P value 0.0088 respectively). The mean score and P values are shown in Table 1.

CONCLUSION

Our study revealed that our patients regarded Mister Thomas' appearance as being both more professional and in keeping with their expectations than Surgeon Lieutenant Commander McLean's appearance.

DISCUSSION

The question of what doctors wear during their clinical work has been a subject for debate for over two hundred years though little quantitative research on the subject has been done. However there is some evidence to suggest that neatness of their doctor's clothing is important to patients. This is in keeping with the observation that both patients and fellow doctors perceive traditional items of clothing such as the shirt and tie positively[1]. Other authors have shown that use of functional clothing in the case of operating theatre greens made no difference to patients' perceptions when studied in the acute care setting of an accident and emergency department. No previous studies have compared the use of military medical officer's uniform and civilian attire. Our study would suggest that the use of Royal Navy number four action working dress uniform appears less professional to patients than the use of traditional civilian attire. Nevertheless with a mean score of 4.33 for Royal Navy number four action working dress uniform the appearance is still deemed professional. We selected Royal Navy number four action working dress uniform on the basis that it offered a suitable visual contrast to dog robbers. Furthermore in view of the increased exposure to sources of potential contamination including wounds and plaster of Paris afforded

by exposure to a week's worth of trauma patients in fracture clinics on the wards and the accident unit the comparative ease of laundering this uniform was considered to offer potential benefits in terms of infection control It is possible that the statistically significant finding for statement 1 may be due to patients not expecting to be seen by a doctor wearing a military uniform This lack of expectation on their part may be due to their unfamiliarity with the practices of an MDHU It is also conceivable that this accounts for the difference observed with regard to professional appearance – simply patients do not expect to see a doctor in military uniform and had such an appearance less professional than the more familiar civilian doctor's attire It is interesting to observe that patients on the basis of appearance perceived no differences between Mister Thomas and Surgeon Lieutenant Commander McLean in terms of kindness hurriedness smartness confidence approachability sense of humour intimidation or politeness In respect of clinical style both doctors in the fracture clinic setting operate in a similar fashion using a combination of bald on record positive politeness negative politeness and indirect politeness strategies according to the Brown and Levinson model of politeness In order to overcome potential confounding factors the statistical analysis was repeated comparing the two doctors' groups adjusted by patients gender occupation and ethnicity The comparison for female patients yielded no statistically different results Excluding military patients from the analysis did not alter the statistically different findings that remained present for statements 1 and 3 only However when patients from non-White Caucasian ethnic groups were excluded it was observed that Mister Thomas appeared to have more of a sense of humour than Surgeon Lieutenant Commander McLean according to their respective study groups (mean score 4 20 versus mean score 3 85 P value 0 0406) This may be due to White Caucasian patients associating authoritative and negative humour values to the use of military uniform in this clinical setting

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Table 1

Results comparing all patients consulted by Mister Thomas and Surgeon Lieutenant Commander McLean (statistically significant results italicised)

Statement Number	Mister Thomas' Patients' mean score	Surgeon Lieutenant Commander McLean's Patients mean score	P value
1	4 36	3 98	0 0161
2	4 43	4 27	0 1905
3	4 68	4 33	0 0088
4	4 07	4 12	0 7772
5	4 36	4 27	0 4762
6	4 57	4 51	0 6101
7	4.50	4 41	0 4845
8	4 18	3 88	0 0606
9	4 43	4 35	0.5091
10	4 46	4 39	0 5185
Total Score	44 00	42 73	0 2224

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Case Report: Use of a Remifentanil Infusion with the Tri-Service Anaesthetic Apparatus

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Surgeon Lieutenant Commander J Wedgwood FRCA Royal Naval Reserve, Consultant in Anaesthesia
Lieutenant Colonel J Henning FRCA RAMC, Consultant in Anaesthesia
James Cook University Hospital, Middlesbrough, Cleveland, UK
All formerly at UK Med Gp Field Hospital, Operation Telic, Iraq

KEY WORDS
Field anaesthesia, Remifentanil, Case Reports

ABSTRACT
During a recent deployment to Iraq it was noticed that patients recovery times from general anaesthesia were significantly prolonged. We postulated that this was because of a lack of nitrous oxide, thereby creating a requirement for greater concentrations of volatile agent to maintain adequate depth of anaesthesia. We chose to adapt the technique of running a remifentanil infusion with the Tri-Service apparatus in an attempt to reduce the administered volatile and thus shorten recovery times.

INTRODUCTION

The Tri Service Anaesthetic Apparatus (TSA) was first described in 1981. It consists of two modified Oxford Miniature Vaporisers in series connected via large bore tubing, a self inflating bag and a one way valve to the patient. It can be used for spontaneous ventilation or intermittent positive pressure ventilation. During operations in areas of conflict or natural disaster these attributes are invaluable as logistic supply of disposals (especially large, heavy weight cylinders) can be difficult.

Despite the ability to add supplemental oxygen a disadvantage of the TSA is that there is no provision to give nitrous oxide (N O). As a result higher concentrations of volatile agent need to be used. This means that the vaporisers run out quickly and patient wake up times can be prolonged leading to reduced effectiveness of operating team in terms of patient turnover.

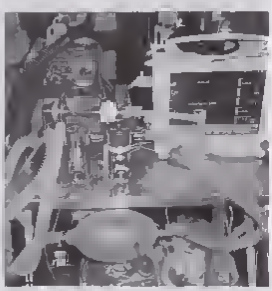

Figure 1 Tri-Service Anaesthetic Apparatus with CompFAC Ventilator and Agent Monitoring

Remifentanil is an ultra short acting opioid, routinely administered as an IV infusion. It is non cumulative with a predictable half life of 3.65minutes. It is a potent analgesic but is not a hypnotic. As such it would appear to have anaesthetic properties remarkably similar to those of N O. Previously it has been shown that using remifentanil can reduce the dose of volatile anaesthetic agent required by as much as 70%. Its rapid offset also shortens the time to extubation and recovery of neurological function.[1,2]

We present two case reports of patients whom we anaesthetised using the TSA with isoflurane and a remifentanil infusion.

CASE REPORT 1

A 25 year-old [illegible] approximately 65 kg presented for urgent appendicectomy. Having obtained verbal consent anaesthesia was induced using a modified rapid sequence technique. The patient received alfentanil 1mg propofol 200mg and suxamethonium 100mg. The trachea was intubated and ventilation commenced with the CompPAC 200 ventilator. Anaesthesia was maintained with an oxygen air isoflurane mix and neuromuscular blockade provided with atracurium. In addition a remifentanil infusion of 50 mcg/ml was started at a rate of 20ml/hr. This equates to a dose of 0.24 mcg/kg/min. We opted to deliver isoflurane at the reduced concentration of 0.6 – 0.7 MAC.

Approximately 15 minutes before the end of surgery the patient was given morphine 7mg. Delivery of isoflurane was discontinued as dressings were being applied and the remifentanil infusion stopped.

Neostigmine 2.5 mg and glycopyrrolate 500 mcg were given in order to ensure reversal of the neuromuscular blockade. This was shortly followed by the return of spontaneous respiration. Having regained her airway reflexes the patient was extubated in the left lateral position. She remained alert and comfortable and was returned to the ward.

CASE REPORT 2

A 38 year old Iraqi woman weighing approximately 60kg presented for elective change of dressing and debridement of a large burn under general anaesthesia. Having gained verbal consent anaesthesia was induced with alfentanil 500mcg and propofol 200 mg. A size three laryngeal mask airway (LMA) was inserted and the patient was allowed to breath spontaneously. Anaesthesia was maintained with an oxygen air isoflurane mix and a remifentanil infusion was started at a rate of 0.1 mcg/kg/min. At the start of surgery the patient remained relatively tachycardic and tachypnoeic despite the presence of the remifentanil infusion. The rate of administration was therefore gradually increased to a dose of 0.2 mcg/kg/min. We found that we were able to maintain spontaneous respiration at this rate whilst reducing the dose of administered isoflurane to 0.6 MAC.

Approximately fifteen minutes prior to the end of surgery the patient was given morphine 7mg. Delivery of isoflurane was discontinued as dressings were being applied and the remifentanil infusion stopped.

The patient awoke within a few minutes and removed her laryngeal mask. She appeared quite comfortable and was returned to the ward.

DISCUSSION

Although we have described only two patients in this report we have gone on to use the same technique with this apparatus on a number of other patients. It has been our experience that patient wake up times are quicker and more predictable when using remifentanil in conjunction with isoflurane for maintenance of anaesthesia. This has clear advantages in the field when multiple casualties can soon overwhelm available operating theatres.

A disadvantage of this technique over the more traditional use of the TSA is that it adds an extra layer of complexity to what is a simple robust and portable piece of equipment. We would argue that during the war fighting phase of any operation the use of remifentanil might not be appropriate. However on enduring operations where facilities are likely to be more permanent and the supply chain more reliable we have found that this technique is effective at significantly decreasing wake up times thereby leading to an increase in theatre turnover.

This is an additional anaesthetic technique that can be safely employed in the field environment during enduring operations which deserves further evaluation.

Conflict of Interest

At time of investigation and writing there were no conflicts of interest however since then the department that one of the authors (JB) works at has received a research grant from GlaxoSmithKline to investigate the introduction of remifentanil onto an Intensive Care Unit. JH has no direct part of this project.

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Book Reviews

The Reconstruction of Warriors Archibald McIndoe the Royal Air Force and the Guinea Pig Club by E R Mayhew Greenhill Books 2004 pp 239 £19 99 ISBN 1 85367 610 1

This fascinating book is not an instructional tome for aspirants to burns and plastic surgery but those contemplating such a specialty would do well to read it

It draws heavily on Public Record Office files to describe the pioneering work of Archibald McIndoe (plastic surgeon extraordinaire) at East Grinstead and the Royal Air Forces organisation for the treatment of aircrews with burns injuries in World War II (we will look after our own)

The incredible effort put into the rehabilitation of aircrew and their reintegration into society is chronicled and illustrated by the writings and reminiscences of the Guinea Pig Club

The book recognises that naval aircrew were also at high risk of burns but otherwise they have no mention A seminal meeting in 1940 at the Royal Society of Medicine at which the use of tannic acid dressings for burns of the hand and face was finally abolished records the Royal Navy s senior surgeon as Cecil Waverley whereas it was C P G Wakeley The only other reference to the Royal Navy is the Admiralty s parsimonious attitude to prolonged sick leave for the burned aircrew

I enjoyed this book and I suspect that most of you would find much to admire in it

N E Baldock
President Central Air and Admiralty Medical Board

Reconfiguring Nature – Issues and Debates in the New Genetics
Edited by Peter Glasner Ashgate Publishing Limited 2004 pp 342 £50

When I made a throw away remark about becoming involved in the J Royal Naval Medical Services I did not realise that Commodore Reed would take me up on it so quickly!

The ideal opportunity arose when I learnt I was to be deployed to Iraq barely a week after receiving the book My plan was to stave off loneliness and depression by reading this book

Thus began my journey through Issues and debates in the new genetics This hardcover book consisting of 342 pages is a publication of original sociological research developed at Cardiff University

Chapter 4 will probably be of interest to GPs as it shares the differing views of GPs regarding the genetics (or not) of schizophrenia

Of interest to the society at large is chapter 5 This discusses the interesting concept that in the future a person s genetic profile may predict therapeutic response and side effect profile thus enabling tailored care The problem highlighted is the prediction of disease without suitable treatment being available

Chapter 6 deals with ethical dilemmas that we may face on day to day practice For example should information be fed back to genetically related non participants if their health could be affected?

Norway s answer is not to anonymise shared samples World this work in the UK? How would this affect confidentiality?

Chapter 8 deals with the limits of informed consent In Iceland opt out consent prevails This has enabled the collection of detailed medical records which have been kept for over 50 years as have tissue samples for many genealogical data exists for most Icelanders

Closer to home the MRC in co operation with the Wellcome Trust and NHS are planning Biobank UK DNA lifestyle and medical information will be collected from approximately 5 000 000 people between 45-64 years of age Samples will be kept in public ownership and data will be made available to commercial companies Issues include feedback, future uses confidentiality and possible harm to third parties

The introduction to part IV genetic and nongenetic information uses complicated arguments which are sound but rather wordy

The conclusion concentrates on the concerns of society at large particularly in the areas of health care genetically modified foods and agriculture There seems to be less hostility to population based genetic screening individual and family genetic testing and counselling

In summary this book is certainly not the easiest to read In spite of my initial enthusiasm it became increasingly hard to remain focused

There were certainly many interesting topics which on their own would have made the book a joy to read

If you have plenty of time and determination and are prepared to seek out the appropriate areas there are definitely some interesting informative and thought provoking topics

O Daramola
DPMO HMS SULTAN

Obituaries

Notice has been received of the deaths of the following

Surgeon Captain Bruce Victor Jones RN (Rtd)

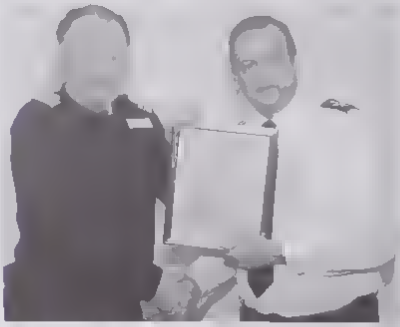
Surgeon Commander Derek Waddington RN (Rtd)

Warrant Officer Medical Assistant Liam McNaulty (Rtd)

The editor would welcome any words in memory of them

Service News

[illegible] Duke QARNNS [illegible] Council HB Confusion [illegible] in undoubtedly for his work [illegible] Change [illegible] the Defence Medical Services Department in the move of all [illegible] MOD Vitam Building from Mr Ian Andrews 2nd PUS and [illegible] Animon, Bagnall VCDS



On his last [illegible] 32 years service [illegible] commitment and dedication WOMA Bos[illegible] presented with a valed[illegible] confusion by MDG(N) Surgeon Rear Admiral Mike Farquhar [illegible] R [illegible]

The 2002 Gilbert Blane Medal

Recipient Surgeon Commander Nick Fisher Royal Navy

Title of Thesis The In Vivo Properties of BR14 and the influence of Microbubble Structure and Charge of their Microvascular Rheology

Founded in 1830 by Sir Gilbert Blane Bt FRCP FRS (1747 1834) under a deed of trust the detailed conditions of which have subsequently been modified A medal in silver gilt (formerly gold) is awarded to a medical officer of the Royal Navy who has brought about an advance in any branch of medical science in its application to naval service or has contributed to an improvement in any matter affecting the health or living conditions of naval personnel The award is made annually unless no officer is considered to be qualified by the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England on the nomination of the MDG(N)

The picture shows Surgeon Commander Fisher with the medal and MDG(N) Professor Carol Black President of the Royal College of Physicians and Mr Hugh Phillips President of the Royal College of Surgeons at the presentation ceremony at the Royal College of Physicians

The Oliver Sword

The Oliver Sword is awarded [illegible] companionable junior medical [illegible] proved themselves by making p[illegible] training and through the display of [illegible] determination courage and compass[illegible] early appointments" Surgeon Lieutenant Elizabeth Yates has amply demonstrated that she possesses all these qualities in abundance and, consequently her first class performance is recognized by the award of the Oliver Sword for 2004 2005

Congratulations to Surgeon Commanders McNeill Love and Greenberg on accreditation as consultants in Occupational Medicine and Psychiatry respectively

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Service News

Rememberance of a D-Day Medic

Lieutenant L HAZARD Royal Navy
First Lieutenant INM

As a Medical Assistant at MDHU Dermford in 1996 I used to see allsorts arriving through the doors of Accident & Emergency Despite the tempo of working in such a large hospital and the treatment often received from the drunk or abusive there was occasioaally the ray of hope One such instance was from an elderly man over time his name eludes me but his memory will never leave me For a short time in my life this man tore at the strings of my heart and sent me this letter after his discharge from hospital I was never to see him again as he passed away shortly afterwards but I feel obliged to share his story

I enlisted in Her Majesty's Forces in the year 1941 at the age of 17 serving an initial training period at a medic with the West Yorkshire Regiment at Fulford Barracks York I moved to Wetherby and then to Thorner near Chatham I then transferred to the East Yorkshire regiment from where I proceeded on an intensive Commando Assault course under combined operations onboard American Ships called Liberty boats They were also manned by American Naval Personnel These boats were specially rigged for assault landing Craft and were of an all welded construction

The East Yorks 2nd Battalion trained in areas of the NW coast and the NE coast of Scotland Firstly we had a cross country route march from Barony in Dumfriesshire to Kinlochleven Training was also carried out in Inverness shire From here we went by cobble to a lock inlet called Archaracle Here we lived on our wits and the food we had was iron rations including corned beef and whatever we could trap or shot

From this base [illegible] including an turn in part of the Scottish coast The main Normandy assault manoeuvres were carried out in the Kyles of Bute at a place called Kimbride The temperature in this area at the time was 20 degrees below freezing and wading in from an assault boat soon had both you and your clothes frozen stiff as a board All these manoeuvres were carried out using live ammunition live mines shelves anti tanks etc Machine guns on fixed lines were fired over our heads

Unfortunately there was a number of casualties and deaths in this simulated war type exercise some died of pneumonia In my Battalion we had in the region of 20 fatalities We also practised mountaineering skills on the 3000ft climbs under an Officer who drove us very hard he was a Tyke whom we nicknamed The Mountain Goat The training we were doing was full blown commando training for although we didn't know it then we were to be the first assault on Sword Beach Normandy

After the final assault exercises were completed in this area the Battalion moved to Glasgow to practise house to house fighting Some of the exercises were fairly hairy we practised jumping from ground floor windows over a 6ft pit filled with sharpened pointed stakes and barbed wire We had a full complement of kit on our backs weighing about 90lbs I was especially lucky – I had the first aid kit and two pouches of ammunition approx 22lbs in weight Having tried to train ourselves with these manoeuvres we were then

taught how to jump from third storey windows it is not quite as hard as it sounds, unless you do it wrong

Along with martial arts training such as Judo and unarmed combat we had an instructor whom we all thought a little demented and if you didn't do the appropriate defence in his attacks with a rifle or bayonet you would end up skewered However we had all been brought to a peak of physical fitness by special training that had been developed initially by Admiral Byrd This consisted of conditioning the body to resist extremes of cold and heat temperature ranging from 20 degrees below freezing to 100 degrees Fahrenheit

Other methods of conditioning were to lead us on special 10 mile forced marches in 2 cars carrying full complement of kit I remember one bash we did in a temperature of 20 degrees plus – that was a killer

Believe me after this intensive training we were all looking forward to going into action We were by now fully aware if only by instinct where it would be Quite frankly in retrospect the training was much harder physically than the actual assault on the beach

We were onboard the Mother Ship on the 3rd June 1944 after two and a half days we embarked on our landing craft on the morning of the 6th of June 5.30am. As I remember when the boats were lowered into the sea there was a very well running but it wasn't a rough sea This didn't bother me as I was a good sailor Overhead the heavy drone of thousands of bombers and fighters filled the air never again would anyone see as many planes in the air at one time

Ships we had never seen before with multiple rocket launchers were sending salvo onto the shoreline The Navy was sending a continuous barrage of shells into the defences of Normandy There were hundreds of Ships and boats of all sizes and types Over the coastline hung a pall of smoke and dust We were making steady progress towards Normandy soon the beaches were in sight it was strangely quiet that is until the boat's ramp went down then all hell broke loose We scrambled out some being cut down just by the boat I was wading with water up to my armpits

In front of me were rows of staggered large iron triangles from which dangled very large anti personnel mines The bullets were spraying thick and fast making a snapping noise as they passed my head I remember idiotically seeking shelter behind one of these mines on my approach to the beach after all if a bullet had detonated the mine I wouldn't be worrying this now

Eventually I reached the dry beach and immediately plated my note adjacent to the sand Bullets were kicking sand into my face vaguely I felt quite calm which surprised me – anyhow I wasn't a good enough swimmer to tackle the Channel Searching inside my medical satchel I was suddenly aware of the bag falling from my hands the reason being I had a large gapping hole in my wrist from which the blood was pumping – the wrist was bleeding I knew it to be an arterial wound All this time I felt no pain and managed to worm my way to the top of the beach I changed a field dressing on the wound and applied pressure I had taken cover at the top of the beach, behind some grass tussocks many of my comrades had fallen fatally wounded there didn't seem to be a square yard where there was not a body

Suddenly the enemy fire diminished the Snappers had finally got amongst them Prisoners appeared at the beachhead while final and amphibious tanks were trundling up the beach the first of the second wave troops were arriving

A lot of ink. I a tiny I had never [illegible] in days alongside me. I shouted to [illegible] I found this tank which suddenly [illegible] large unexploded bomb. [illegible] I [illegible] [illegible] as if it had been dynamited. I [illegible] I [illegible] days having been [illegible] to the tank which I find this demolition [illegible] Behind the tank was a large shed like construction. I was at an this when an Officer told me to bloody well move many miles. I wanted to be blown up! – that thing was full of explosives.

I don't know how long it took to control the situation but it seemed an age. By now things had quietened a bit except for sporadic bursts of fire and the odd shot from a sniper. We [illegible] in control and the Bench master was supervising the clearing of minefields to allow the tanks and support vehicles to come through. [illegible] military policeman appeared carrying [illegible] signs, direction signs that were to be placed [illegible] and troops and vehicles through the minefield. A sudden short burst of fire kicked up the sand near these men that hit the ground shelter run. I ran psychologically behind the tank. [illegible] were about 24 inches in area (six feet) till men seeking refuge behind [illegible] (not direction signs) the [illegible] of it to this day still amazes me.

Now things were really quiet and we could stand on the bank quite safely. Soon a LCT [illegible] and a Naval Officer got all the [illegible] and including myself. We didn't know about and were soon out in a mile out in [illegible] mid-ship we heard a crump sound from the front of the LCT. A Naval Officer [illegible] a thick [illegible] quite cheerfully that we had been torpedoed but everything was OK. The bulkhead was sealed and they had radioed for a destroyer to take us off.

By the time the destroyer arrived our boat was sinking fast and the sea was practically at deck level however very quickly and efficiently we were taken up the scrambling nets and aboard quite safely. I spent the night on a hospital Ship at Southampton. The following day I boarded a hospital train in Southampton there I was photographed by Bert Hardy a Picture Post photographer. I was leaning out of the train window drinking a cup of tea. As a consequence of this my picture appeared on the front cover of the June issue of the Picture Post 1944.

I finished up at Wolverhampton Royal Hospital where a brilliant surgeon Mr Fincher saved my hand. It was a couple of years before it was in good working order but it is thanks to that surgeon that I can use my hand at all.

Major Bunger King gave this address over the Ship's tannoy before we set sail for Normandy. It is an extract from the Speech in Shakespeare's Henry V.

And crispen crispian shall never go by from this day to the ending of the world but we in it shall be remembered we few we happy few we band of brothers: for he today that sheds his blood with me shall be my brother; be he never so vile this day shall gentle his condition and gentlemen in England now abed shall think themselves accursed they were not here and hold their manhood's cheap whiles any speak that fought with us upon St Crispian's day.

Sadly Major King died in action later in the campaign a very gallant gentleman.

Reading this passage never fails to raise the hairs on my neck. Time ticks away and we too forget these selfless moments of gallantry and respect that one had for fellow servicemen whatever the uniform or cadre. I will never forget him and refer to this passage whenever question my reason for joining the Service, in particular the Medical Services!

Appointment of Fee Paid Medical Members of the Pensions Appeal Tribunals 2005

dca Department for Constitutional Affairs
Justice rights and democracy

The Secretary of State and Lord Chancellor invites applications from suitably qualified persons to be appointed as fee-paid Medical Members of the Pensions Appeal Tribunals. Applicants should preferably be of Consultant status but applications from Practitioners of at least 7 years standing who meet the other criteria will be considered. The retirement age is 70 years and the Lord Chancellor will expect a reasonable period of service before retirement.

The Schedule to the Pensions Appeals Act 1943 provides for the appointment of Medical Members to the Pensions Appeal Tribunals. The Pensions Appeal Tribunals principally deal with appeals by ex service personnel in connection with their claims for a War Pension and related benefits. Medical Members sit with a legally qualified Chairman and a member with experience of H.M. Armed Forces. Service experience in the Regular or Reserve Forces is desirable, although not essential.

Successful applicants will be appointed for five years initially, renewal for further periods of five years is automatic subject to the individual's agreement and the upper age limit unless a question of cause for non-renewal is raised or the individual no longer satisfies the conditions or qualifications for appointment. The current fee is £412 per day.

How to apply

Application packs can be downloaded from the Department's website www.judicial-appointments.org.uk (current competitions) or obtained either by telephoning 020 7210 0123, faxing a request on 020 7210 0124, by e-mailing ipac@dca.gsi.gov.uk or by writing to:

Competition Code: 05/00186 "Judicial Appointments Applications Service, Department for Constitutional Affairs, Room 2.26, Steel House, 11 Tothill Street, LONDON SW1H 9LH. **DX 140522 WESTMINSTER 6.**

Please use the competition code in all correspondence.

All completed application forms must be received by 14th June 2005

The Secretary of State and Lord Chancellor is committed to equality of opportunity in the appointments process for all those who are eligible for judicial office. He encourages and welcomes applications from women, minority ethnic and applicants with disabilities.

WRAP YOURSELF IN YOUR BRANCH WITH PRIDE!

A Branch cummerbund has been designed and exhaustively tested, winning approval from NEMOs to MDG(N). Showing a Caduceus surmounted by the Naval Crown, it is edged in red piping for Medical Officers and the traditional MS colour of Salmon Pink for Medical Services Officers.

Cummerbunds are specially made to order and may be obtained via the order form to:

Lt Cdr Roy Manwaring
Head of Training
Institute of Naval Medicine
Alverstoke
Hants
PO12 2DL

Cost: £23.50 by cheque payable to "Wardroom Mess INM", or by debit from INM Mess Account.

Name _____

Male / Female (different widths for different sexes)

Waist Size (state actual size. Cummerbunds will be made size +2" to allow for dress)

Delivery Address: _____

Contact No _____

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Unless specifically stated to the contrary on submission, papers are accepted on the understandi that they are contributed solely to this journal Any material previously published should accompanied by the written consent of the copyright holder to re publication for illustrations tables an acknowledgment should be included in the caption and a full reference provided

Manuscripts for consideration may be submitted to the refereeing process The Editor retains t customary right to style and if necessary to shorten material accepted for publication to alter pape to achieve consistency in terminology and to suggest other revisions

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Authorship credit should be based only on substantial contribution to (a) conception and design analysis and interpretation of data and to (b) drafting the article or revising it critically for importa intellectual content and on (c) final approval of the version to be published Conditions (a) (b) and (c) must all be met. Participation solely in the acquisition of funding or collection of data does n justify authorship If requested authors shall produce the data upon which the manuscript is base for examination by the Editor

Ethics

Precautions are to be taken to prevent [illegible] and the [illegible] is masking the eyes in photographs. Where a patient or subject might be identified from an illustration or from the text it is essential that written permission is obtained from that patient and forwarded with the manuscript. Reports of experiments on human subjects will not be considered unless the protocol was approved by an appropriate ethics committee and followed, and the authors state explicitly that each subject gave his or her informed written consent. A copy of the letter of approval issued by the ethics committee must be provided.

Preparation of manuscripts

Manuscripts must be in English in a form suitable for publication as against oral presentation. **Uniform Requirements For Manuscript Submitted to Biomedical Journals** (N Engl J Med 1997 **336(4)** 309-15) gives guidance. Scientific papers should be prefaced with an abstract of the hypothesis, argument and findings. This should not exceed 150 words. Headings within the text should be used to highlight the content of different sections. Where possible, manuscripts should be prepared in Microsoft Word on CD or floppy disc. Otherwise they should be typewritten in double spacing on one side of A4 paper. The author should retain a copy of the disc/manuscript.

Title page

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Tables and illustrations (figures) should add to the paper rather than only repeating information presented in the text. Each table and illustration should be on an individual page separate from the text, be numbered in two distinct sequences in the order in which they are mentioned in the text, and have an explanatory caption (typed on a separate sheet for illustrations).

News photographs of academic, social, sport or other occasions involving members of the Royal Naval Medical Service are welcomed.

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References

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Editorial

It is amazing how the effort to produce only three editions a year manages to fill some part of every working day. The first edition for 2005 seems to have been well received and I have had some positive feedback on the content and my thanks go again to John Sharpley, his team and all other contributors for their grand efforts.

As I write this, some 167 ships are gathered in the Solent for the T200 Fleet Review, they are impressive with 36 Navies represented. In terms of fire power and splendour they are an awesome sight and amply demonstrate how important sea power still is and the part the sea plays in our Islands' economy, defence and leisure activity. In view of this I thought it somewhat disappointing that most of the news coverage of this spectacle centred around the evening mock battle being between red and blue fleets rather than the English, French and Spanish and that we should be celebrating victory over our old enemies. One felt that the point of the celebration was missed in that it is to celebrate a sea battle that changed the course of history, the bravery and seamanship of all who were involved as well as the charismatic and inspired leadership and strategic genius of Admiral Lord Nelson. The fact that the largest ship being reviewed is the French Aircraft Carrier The Charles De Gaulle is perhaps evidence that an old enemy sees as much importance in this historic tride and leader as we do.

This term has been as hectic as ever with the visit of Admiral Sir Alan West GCB DSC ADC, the First Sea Lord, to JNM and to RH Haslar where he unveiled a plaque to commemorate the thousands that lie buried in the paddock. There are some photographs and a short news report covering these events. It was illuminating to learn that despite 40 years in the Royal Navy this was the first time 1SL had visited JNM or been briefed about its functions and outputs. The first event well. The unveiling ceremony was moving and well attended. The day was finished off with a very successful Blond Red cocktail party in MDG(N)'s Residence garden.

Another notable event this term was the Annual General Meeting and reunion dinner of the Royal Naval Medical Branch Rating and Sick Berth Staff Association which MDG(N) presented a Standard to the President, Mr Jack Elgie. Most ex military associations, Ships and Commando Units have a Standard and it is fitting that one of the oldest branches of the Royal Navy has a standard to Muster behind in order to pay respect to colleagues past, present and future. Pictures of the Dedication ceremony are in the Service News section. Whilst on the topic of associations the QARNNS and VADs have very active branch associations and further information is available if required.

Over recent months we have received, from differing sources, requests for information about the Naval Hospital at Port Mahon Minorca. There is a project to restore this historic ruin and I draw your attention to Surgeon Captain David Wright's letter to the Editor, which gives information about the project and how one might help.

Frank Reed

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Naval Medical Care 1620-1770

Saving the Seamen: Naval medical care in the Pre-Nelson era, 1620-1770.

Dr Kathleen Harland, MA Ph D

INTRODUCTION

The one hundred and fifty years with which this article is concerned begin with the decade in which the Stuart government first launched aggressive expeditions abroad and end with the year after which Nelson first went to sea. During this period England fought seven major wars totalling forty years during which the Navy bore the brunt both of preserving the nation's security and of forwarding its interests in the strategic and commercial spheres. These requirements necessitated operating far from home from the Baltic to the east coast of Canada from the Mediterranean to the West Indies, from the Irish Sea to the Indian Ocean. In 1694 (during King William's War) seamen numbers were 47 710 in 1709 (during Queen Anne's War) they were 47 647 in 1726 (half way through a period of peace) they were 16 872 in 1748 (at the end of the War of the Austrian Succession) they were 59 596 and in 1760 (at the height of the Seven Years War) they were 86 620.

Clearly the presence of such numbers held important implications for the medical service which supported it. Engagements at sea though catching the eye of the historian and vital for the successful confrontation of the enemy were from a medical standpoint, the least onerous of the surgeon's duties because they occurred relatively rarely. It was the day in day out, year in year out slog of keeping the men healthy in the face of adverse working conditions and a limited diet that posed the real problem. Yet it was one that had to be solved because the Admiralty consistently faced a manpower shortage. The human resources which it did have therefore were in be carefully husbanded and it was this need which placed the physicians and surgeons in the forefront of the naval effort.

At their head during war time were Boards of Commissioners for Sick and Wounded Seamen replaced after 1713 by Commissioners of the Navy Board. This system incorporated two major weaknesses. Since the Boards were convened only for the duration of a war there was a consequent disruption of and lack of continuity in medical affairs. Secondly the Navy Board Commissioners charged with the care of sick seamen were in their professional lives two hats and inevitably gave more of the time to their main task such as the Controllership of the Victualling than they did to the medical world in which they had no experience.

The organization which these Commissioners led was an evolving one. At sea its mainstay was the ship's surgeon borne on all naval vessels assisted by one or more surgeon's mates depending on the size of the ship. Surgeons and mates were also appointed to hospital ships which regularly accompanied squadrons during war time. On shore the Navy offered four methods of care for sick seamen. Beginning in the 1620s the earliest method was the use of landladies the quartering of patients in the houses of coastal towns where they were attended by local physicians and surgeons. This practice had the advantage of flexibility but was expensive and open to fraud. Its use marked a decreased during Queen Anne's War 1702-171 but gradually increased in the period of comparative peace which followed 1713-174 The building of the naval hospitals at Gosport and Plymouth largely led to its abandonment thereafter except in a crisis when patients had be landed elsewhere. The second method of care ashore, was the use made of the two London hospitals St Bartholomew's and St. Thomas. This began during the First Dutch War 165 1654 and continued to varying degrees until the early 1740s. The hospitals were not generally used for first admissions. Invalids obdurate cases were returned to them for the superior treatment they afforded.

The third way of providing for the sick and wounded was the placement in a naval hospital. This process began much earlier than has ever been acknowledged dating as it does from 1689 when the first naval hospital was established at Plymouth at the beginning of King William's War. This initiative was followed up in the first decade of the eighteenth century by the setting up of further hospitals at Gosport, Deal and Rochester at home and abroad at Jamaica Lisbon and Minorca. In 1740 four years before permission was granted for the building of Haslar Hospital approval had been gained for a replacement hospital at Jamaica and a new hospital at Gibraltar. Work began immediately. The opening of Haslar Hospital to patients in 1754 and Stonehouse Hospital in 1760 completed the Navy's scheme for secondary care during this period. The fourth and final part of the Navy's medical programme dealt not with the active sick but with the permanently disabled who would require long term accommodation. Greenwich Hospital commissioned in 1695 admitted its first pensioners in 1705. The foundation of the hospital was a logical extension to the establishment of the Plymouth Hospital in 1689 and indeed to the establishment of the small temporary even earlier hospitals set up during the Dutch Wars between 1652 and 1674.

The three categories of medical care during this period will now be examined in more detail. The role of the sea surgeons the system of quartering with landladies and finally the increasing use made by the Navy of its own hospitals.

SEA-SURGEONS AND SEA-PHYSICIANS

From the beginning of the period under study every naval vessel carried - or should have carried - a surgeon as a member of its complement. In 1654 the first physician was appointed to the Fleet and the practice was to continue into the next century. These men of university education were members of their own College the advice of which the Admiralty normally sought before appointments were made. Surgeons might have one of two backgrounds. They might have entered the Navy direct as a surgeon's mate in which case their education depended on what they learned at the side of their successive masters. Alternatively they might have pursued their seven years apprenticeship in the civilian world under the [illegible] of the Company of Barber Surgeons of London or one of the provincial companies of barber surgeons in which case theoretically at least, they would first have had to be examined and approved by the London Company.

It is impossible to generalize on the standard of medicine achieved by the surgeons. So much depended not only on their training but on their personal qualities and the circumstances in which they had to carry out their duties. Every tale of devotion to duty can be matched by one of dereliction of duty. For every Thomas Blakeaway an excellent assistant a very eminent operator in London there was another such as the surgeon of the *York* who was reported afraid to tend the sick from an apprehension of being liable to take the sickness himself. Again at one end of the spectrum there is the edifying spectacle of Surgeon Richard Wiseman and his peers in the aftermath of battle we after every fight went together visiting one another's wounded men. Discussions would ensue and a practitioner might had himself having to justify his preferred method of treatment against opposing views. At the other end of the spectrum were those medical men who came under the beady eye of the seaman Edward Barlow.

> And the surgeons and doctors of physic in ships many times are very careless of a poor man in his sickness their common phrase being to come to him and take him by the hand when they hear that he hath been sick two or three days thinking that is soon enough and feeling his pulses when he is half dead asking him when he was at stool and how he feels himself and how he has slept and then giving him some of their medicines upon the point of a knife which doth as much good to him as a blow upon the pate with a stick. And when he is dead then they did not think that he had been so bad as he was nor so near his end.

In this extract Barlow makes four worthwhile points. Prompt attendance on the sick should have been the norm. Questions asked at the bedside would then have been more appropriate. Many medicines lacked efficacy. Some doctors could not recognize the various stages of an illness. Three of his four criticisms were capable of remedy and many medical men must have done better than those he had in mind. In the absence as it would seem at any flood of

[illegible] the [illegible] surgeons and physicians [illegible] say that the [illegible] will [illegible] most reasonable [illegible]

An additional [illegible] became so [illegible] the presence [illegible] ship took place [illegible] and to exist. [illegible] could be raised in [illegible] been before the Council [illegible] purpose. For example [illegible] the [illegible] 1700 Admiral [illegible] the *Journal of Sick and* [illegible] could [illegible] could take [illegible] could [illegible]

[illegible] the [illegible] 1674. From [illegible] the Plymouth [illegible] 1692 he became a [illegible] Company and [illegible] F.R.S. and F.R.C.P. [illegible] however far less [illegible] could find their [illegible] who had seen [illegible] This [illegible] equally apply in a [illegible]. His [illegible] squadron would [illegible] included giving advice [illegible] the ships were in port [illegible] hospitals abroad. It also [illegible] physician to the captain of his ship. In

1693 Doctor William Oliver found that his commanding officer simply refused to take the cordials prescribed for his fever, swearing that he would prefer to die. Doctor Oliver, a peaceable man, substituted a julep made from ship beer and his own [illegible] which was [illegible] much more to the captain's liking, and [illegible] all was well. Such compromises were acceptable in so highly stratified a society at a time when medical men did not have the unique knowledge of wider [illegible] of [illegible] things.

In these circumstances, therefore, it was important that in the eighteenth century there was a [illegible] longer service in the Navy with the accompanying [illegible] of expertise won by experience. Doctor Oliver himself, having served with the Mediterranean Squadron from 1693 to 1698, went on to become physician to the naval hospital at Rochester during Queen Anne's War 1702–1713 and ended his career as physician to Greenwich Hospital from 1714 to 1716. William Wyatt, an apprentice of James Yonge, first entered in 1683. Like other sea surgeons of the period who also served in shore hospitals, Wyatt was surgeon at the naval Hospital at Plymouth from 1689 to 1697, from 1703 to 1713 and from 1740 to 1744, the year of his death. His last appointment was due to the Admiralty's recognition of the value of his long period of service. In 1740 there had been complaints concerning the running of the hospital and Wyatt was selected to investigate conditions there. Another surgeon, Richard Gibson, had charge of the *Princess Anne* Hospital Ship during Queen Anne's War. He saw further service in the *[illegible]* Hospital Ship before being appointed to the temporary naval hospital set up at Baia near Naples from 1718 to 1720. A move to the hospital at Gibraltar followed until 1721 when he was recalled to become surgeon at the Deptford Yard where he died in 1727. These men and others like them would have become comfortable working in a naval environment. They would have been able to reminisce with fellow officers and to share a common history. Gradually the surgeons came to see themselves as members of a self identifying group. In 1747 this feeling was formalized when the Association of Navy Surgeons was formed. Based in London, meetings were held at irregular intervals and appear to have stopped in the 1760s. Nevertheless early on its members received lectures on anatomy from William Hunter and in so doing were continuing a

tradition of [illegible] improvements [illegible] many years later.

For throughout the period under study help was indeed available in printed books for the sea-surgeon apprehensive in practising in unusual surroundings. In 1617 of being the sole medical authority on his vessel yet anxious to cope in ships with the diseases peculiar to seamen. In the 1650s Woodall's *The Surgeon's Mate* contained popular tips together with his *Viaticum and Domestic Surgery*. In 1655 James Cooke published a textbook that was to remain in use for the next fifty years. His *Supplementum chirurgicum* was particularly valuable to sea-going practitioners because it contained advice for the surgeon the physician and the apothecary all roles which he had to perform in the course of his duties. Illustrated by Cooke's own case histories dealing with fractures concussions and battle wounds it must have become a well thumbed *vade mecum* on many a sea surgeon's bookshelf. Another volume containing practical advice was James Yonge's *Curtus Triumphalis* of 1679 in which he set out his revolutionary method of amputation whereby a flap of skin and adventitious tissue was reserved and used to cover the stump thus promoting speedier healing. Perhaps most valuable of all and certainly a volume of lasting significance was John Moyle's *Chirurgia Britannica or the Sea Surgeon* published in 1693 and already by 1702 into its fourth edition. It was divided into two sections a list of contents for the well stocked medical chest and a description of the cases most likely to be encountered both surgical and physical. Books at this date were expensive and could never be a substitute for experience. Yet the existence of these titles and others reveals an awareness of the unique character of naval medicine and of the diverse skills required in gun deck competently to practice.[1]

The sea surgeons however were not the sole determinants in the creation of an efficient medical service afloat. The administrators too had an important role to play. Their contribution at this time focused on three areas the encouragement of systematic record keeping supervision over the supply of high quality drugs and the monitoring of professional standards. The first reform was initiated and implemented by the Commissioners for Sick and Wounded Seamen during Queen Anne's War. In 1703 they [illegible] the approval of the Navy Board [illegible] and into first [illegible] and [illegible] permit. Shortly [illegible] in order to extended to all ranks of the fleet. The Commissioners [illegible] the pounds would be [illegible] but the [illegible] was [illegible] The Commissioners [illegible] and companions [illegible] exempted [illegible] special [illegible] the Admiralty. The practice of keeping [illegible] then [illegible] the [illegible] period.

The second point [illegible] the quality of drugs [illegible] chests. A matters stood the [illegible] a surgeon an apprentice [illegible] pay for the stocking of the [illegible] the temptation [illegible] that the private apothecary [illegible] the lowest tenders. Quality [illegible] price. This [illegible] 1703 when the Society of Apothecaries [illegible] was given permission [illegible] Navy Stock venture by which the Apothecaries [illegible] to provide the best [illegible] for the sick of the fleet. The [illegible] the mass of arguments between the [illegible] and the sea surgeons shifted to the high prices charged by the Society which [illegible] to be exorbitant. They were [illegible] and in 1731 the procedure was [illegible] After inspection of the contents [illegible] the Royal Surgeons Company and the physicians of Greenwich Hospital the chests were to be [illegible] and sealed to prevent interference and were to be [illegible] on board ship only in this condition.

The third improvement instituted in 1709 continued the long established annually by which sea surgeons were allowed to prescribe and administer internal medicines to sick reserved for physicians. This had been permitted through the recognition that it was impossible to put a physician into every warship. It was however possible to test whether prospective surgeons had sufficient knowledge of general medicine outside surgical procedures. By Admiralty order this task was given to the physicians to the Sick and Wounded Board who then took it in turns to examine candidates sent by the Navy Board.

The [illegible] correctly [illegible] the hospital practice demonstrated in other departments where great efforts were made to seek out and supply articles of the finest quality whether it be timber canvas cannon or victuals It was a sign that medical matters were being brought up to the same high standards as generally prevailed elsewhere in the Navy

What type of practice might the sea surgeon look forward to as he arrived on the quayside at the beginning of a voyage passed fit by the examiners at Barber-Surgeons Hall accompanied by his medical chest and armed with hooks of instruction? His might turn out to be a healthy vessel with no infective agent on board Then he might expect to see only the contusions lacerations and fractures consequent upon men working among the heavy moving parts of a rolling warship together with the coughs aches and rheumatism generated by the cold and damp conditions above deck If the voyage was not over long he would not be troubled by cases of scurvy Scurvy was fatal only after protracted sea time though it was certainly debilitating in minor cases It was well known among seamen that it could be cured by eating fresh fruit and vegetables though it was not always possible to obtain them The effects of scurvy put a limit on the length of time a squadron could remain at sea Towards the end of the period under study the problem was overcome by the frequent re provisioning of the ships with fresh meat greens and fruit This procedure kept Admiral Hawke's squadron healthy during its prolonged blockade of Brest in 1759

A [illegible] given that the purser was [illegible] it was perfectly adequate One [illegible] its good effect on

> [illegible] and meager and helpless children into the navy who have formerly lived hard living every thing in a plentiful manner at sea they thrive extraordinarily beyond what anyone can imagine and shoot up to be men on a sudden after a prodigious manner [1]

Like diet another factor which was outside the surgeon's control but which had a decisive effect on the crew's health was the cleanliness or otherwise of the ship The prevailing though mistaken belief that it was bad air – *mal aria* which caused disease was in fact helpful because it meant that attention was paid to bad smells and stale odours Consequently most captains insisted on the regular scrubbing of decks and quarters which assisted in keeping men and clothes clean In the maintenance of health the actions and vigilance of senior officers was crucial Nelson was thinking of this when he wrote

> The great thing in all military service is health and you will agree with me that it is easier for an officer to keep men healthy than for a physician to cure them [3]

If all of these circumstances prevailed then a journey to the Mediterranean might have been relatively trouble free as Table 1 illustrates In the Mediterranean later figures from the hospital at Minorca also reveal that considering the size of the fleet in harbour and that a war was in

Table 1 1
Numbers of Sick on Board Ship and Ashore at Gibraltar 1726 1730

Date	Sick on Board	Sick Ashore	Nos. Borne	Percentage ill
13 Nov 1726	32	161	c 2,600	8%
11 Sept 1727	186	154	c 6 926	5%
25 Nov 1728	10	19	c 1,000	2%
March 1729	26	10	c 1,300	3%
2 Feb 1730	190	19	c 1,300	15%

Source Admiralty In letters Mediterranean 1726 28 1729 37 ADM 1/378 ADM 1/379 The National Archives Kew Surrey

progress, the numbers requiring treatment ashore were not unreasonable, as shown in Table 1.2. Although these figures do not take into account the sick kept on board they still represent a satisfactory state in the health of the squadron.

The contrary situation might, however, be the case. Much depended on the background of a ship's complement. If the men had been held on tenders for any length of time while the fleet was assembling, then they would be likely to bring disease on board with them carried by the lice on their clothes. All the more so if they had been pressed from the gaols. Camp, gaol or ship, fever, the modern typhus, spread easily in cramped and unhygienic surroundings.[7] In the period under review the worst typhus epidemic was probably that of 1740-1741.[8] A severe English winter was the major contributing factor in a particularly virulent outbreak which put enormous pressure on shore facilities. Their inadequacies pointed to the need for the Navy to build its own large hospitals. A later outbreak occurred in 1755-1756, which hindered mobilization at the beginning of the Seven Years' War. The sources of other epidemics are less easily identifiable but were most likely associated with typhoid and dysentery. In 1689, for example, Admiral Herbert reported 599 dead and 2,588 sick in his fleet anchored off Plymouth.[9] The danger and difficulty of keeping so many patients on board their ships led to the establishment of the naval hospital at Plymouth.

Abroad, seamen suffered from yellow fever and malaria, most usually associated with the West Indies, as well as typhoid, lesser fevers and fluxes. In 1726 Admiral Hosier returned to Jamaica from a prolonged blockade off the Spanish Main needing to put 900 sick seamen ashore.[10] A year later his successor arrived at the island from England with some 700 ill after the trans-Atlantic crossing.[11] A tragic example of an extended malarial epidemic occurred at New Greenwich, Jamaica, where the hospital completed in 1744 had been built next to a mosquito-infested morass, and in consequence killed more than it cured. In theses calamities the only effective drug at the surgeon's disposal was Jesuits' bark for malaria. Otherwise he had recourse to palliative treatment, designed to fortify and refresh the body to provide the environment in which the strength of a man's constitution would see him through his illness.

It is understandable that surgeons wished to join the Navy. Apart from the lures of adventure, foreign lands and the possibility of prize money, there was the experience to be gained in dealing with a wide variety of medical conditions. They encountered the hygienic measures deployed by senior officers in the prevention of disease. They learned how to conduct themselves both with superiors and inferiors. They became accustomed to consulting with colleagues in the exchange of information. Should they decide to return to civilian life they had had an excellent training.

Table 1.2
Patient Numbers in the Naval Hospital at Minorca, 1742-1743

Date	No. of patients	No. of ships	Diseases identified
9 May 1742	440 drawn	from 40	Fevers, fluxes, scurvy
13 June 1742	337		Fluxes, fevers
28 June 1742	305		Fluxes, fevers
16 Aug. 1742	152 drawn	from 30	Fluxes, fevers
13 Dec. 1742	417 drawn	from 34	Fluxes, fevers
10 Jan. 1743	361 drawn	from 37	Fluxes, fevers, scurvy, consumptions, wounded men

Source: Admiralty, In letters, Returns of the sick in the Gibraltar and Port Mahon hospitals and the Sutherland Hospital Ship, 1742-43, ADM 1/5115/11, The National Archives, Kew, Surrey.

THE QUARTERING SYSTEM: CARE IN THE COMMUNITY

The Navy's practice of sending its sick seamen ashore to be cared for in private homes was of long standing. It began in 1625 at the end of the expedition mounted against Cadiz in the reign of Charles I and did not end until Haslar and Stonehouse Hospitals were operational in the 1750s in the reign of George II. It was a system that fitted the need of time and, in spite of its faults, satisfied naval requirements to a remarkable degree. It was particularly useful in the seventeenth century in the period of the three Dutch Wars between 1652 and 1674 when the Navy was smaller than in the eighteenth century and operating relatively close to home. The system was suited to a small nation with expansionist ambitions, ambitions which would be both driven by and protected by its Navy.

Advantages

One great advantage of the system of placing patients in private homes was its flexibility. Men could be landed on shore at the point nearest to the battle site. There were, after all, many ports and fishing villages along the south and east coasts of England. It was their harbours that helped to make their fleets which in rival longboats could use to deposit those who ill to be returned aboard ship. During the Dutch Wars, Harwich, Yarmouth, Ipswich and Rochester were the towns most heavily used but smaller communities like Aldeburgh were expected to bear their share of the burden. In this way successive governments avoided committing large sums to a project that might quickly lose its usefulness. Why, for example, build a hospital at Plymouth during the first war only to find that in the two subsequent wars the action had moved to the North Sea? It made no sense to rely on what was already there.

Not only were the people there, they were ready and willing to help. One instance of humanitarian action was recorded by John Knight, Sergeant Surgeon to Charles II:

> The notice in the *Gazette* of the king's care for maimed seamen has caused a meeting at Ipswich to enact that all funds given or bequeathed for the poor should be employed in the maintenance of maimed seamen as they have no hospitals except the remains of a monastery where their poor children are kept at work. An almshouse hitherto employed for old women is to be extended to the men, with a more ample allowance.

The almshouse converted to a hospital for seamen was therefore the result of a generous impulse at local level. Several of the towns of Norfolk and Suffolk were from line casualty receiving stations and their inhabitants probably felt it incumbent upon themselves to act in a generous fashion. Local officials too such as the mayors and bailiffs were prepared to assume new responsibilities. It fell to them to organize the accommodation to provide comfort more for recovered men returning to their ships, to pay apothecaries, boatmen, pilots, messengers to arrange for burials. It could be a considerable workload for men who might live in a seafaring little town but who would not normally have been associated with the Navy and in particular with dealing with the horrors of the aftermath of battle. That much was left to their initiative revealed by a letter from the Mayor of Dover to the Council of State. He drew attention to the lack of detail in his instructions. Were officers and men to be treated in the same fashion? Was the reward to be the same for caring for the sick as for caring for the wounded? Should not quarterers with a dangerous case of fever be paid more than the person looking after a mild case of scurvy? Nevertheless he and others like him carried on. Behind these inflexibles was the monstrous of the system: the housewife with room available to take in a seaman of two. Often a widow and frequently a seaman's widow from her point of view it was good work. She did not have to leave home and the pay was very fair: one shilling per day for the man's care and victuals. At its best, where due care and attention were shown, the system provided the patient with a proper environment in which to be treated and recuperate.

Although untrained persons – or at least untrained in the work they were called on to perform – were an important part of the method of care in the community, an equally important ingredient was the Commissioners of successive Boards for Sick and Wounded Seamen who were appointed by central government to organize and supervise the facilities in the areas of the coast and hinterland allotted to them. One such was the district John Evelyn. His work entailed a good deal of travelling around, initially to find and empower his local representatives. On the first tour of his district, for example, Evelyn

ppointed his first deputy at Dover settled an agent at Deal two days later and more officers t Chatham four days later on his way home ' his colleagues were doing likewise Those elected would correspond with the commissioners would register seamen in and out of lodgings issue slop clothes and make ayments They had to be reliable On one occasion Evelyn sent away £2 000 to his agent t Chatham Gradually a local administration o serve the needs of sick seamen ashore was put together The agent in particular became an important official because it was he whom the oards instructed and he who made all the official returns of the number of sick in quarters ad the length of their stay In the eighteenth century his work was extended to the contract hospitals a twin role which was retained almost to the end of the period under review

Treatment for the sick was provided by local urgeons paid at the rate of 6s8d per man per ure A further allowance of 6d a day for the first welve days was given for smallpox cases who equired extra nursing ' These surgeons had the ifficult right to send difficult cases up to the o London hospitals St Bartholomew s and St homas s At the outbreak of every war in the eventeenth century beds were reserved in them r seamen patients by order of the Privy ouncil In the eighteenth century the practice as well established increasingly however it ussed fracture because the London hospitals ere charitable institutions designed for the care f the poor not for the service of the State Their overnors however had to acquiesce and the pirce of their compliance is revealed by the fact at between 1689 and 1698 St Thomas s cured 166 sick and wounded seamen It would also f course have taken in many more who died ven that St Bartholomew s was working at a ular rate approximately thirty per cent of the nvy s sick during King William s War 1689 697 are likely to have passed through these two ospitals And not just during the war but before he war too Figures for Easter 1688 to Easter 689 give approximately 930 taken in (827 ired) at St Thomas s and 980 taken in 1845 ired) at St Bartholomew s The presence of so any must indicate that government patients ere habitually admitted that they regularly ccupied a proportion of the beds regardless of hether there was a war on or not The stream f casualties could not and did not dry up uptly with the cessation of hostilities The recovery rates of the time would ensure that some seamen might still be under care many months after their initial injury

A general picture emerges that when the quartering system was working at its best many illnesses and wounds were capable of resolution by simple nursing in a clean dry house when proper attention was given to diet and medication On the other hand a seriously wounded seaman given that his constitution was sufficiently strong to withstand the writing for treatment and the stress of travelling from the coast would eventually have found himself in a hospital ward The system could work well enough This is the reason why it was revergent between 1770 and 1740 that and the desire of the quarterers to re establish their livelihoods lost during Queen Anne s War 1702 1713 In 1734 for example seamen patients at Plymouth were dispersed as follows

In the hospital	146
In town quarters	97
In and about Stinchouse	47

Town quarters therefore were accommodating virtually the same number of patients as did the hospital When in the same year Commissioner Edisbury visited Deal the minister at the hospital showed 58 patients who were greatly outnumbered by the 214 lodged in town quarters Although this situation would not have arisen had the contract hospitals been properly run the naval authorities during the typhus epidemic of 1740 1741 when accommodation was at a premium were only too glad to exploit their traditional link with private homes A fair judgment might be that the quartering system had sufficient good in it to ensure its place in naval medical history for 125 years

Disadvantages

Nevertheless inherent to the system were drawbacks which inevitably impaired its efficiency These drawbacks had no doubt become evident over the years but were not formally identified until 1793 when the members of the Fifth Commission for Sick and Wounded Seamen put up a paper to the Admiralty entitled The Mischiefs of Town Quarters The points in the document can be grouped under three headings manning money and mercy Seamen in quarters at sea were liable to abscond

Putting them in public houses simply increased that likelihood made them disorderly and occasioned relapses. Men were discouraged from joining the Service because they knew they would have to wait for quarters if they were landed in bad weather. They knew too they would receive only limited attention from the physicians and surgeons because the quarters might be scattered over three or four miles. They were aware that they might be placed two in a bed possibly next to an infectious case. Since manning the Navy's ships to their full complement was a persistent problem these criticisms were very relevant. Changing tack the Commissioners pointed out that money could be saved through not using landladies who frequently connived with the men to prolong their stay unnecessarily. It would also be easier to prevent seamen coming ashore with a pretended sickness if they were admitted to a hospital and thus the cost of their cure would be saved. Finally the Commissioners appealed to the mercy of the naval authorities. Men should not be left neglected in quarters where the landladies frequently did not administer the prescribed medicines but sold them instead. Nor in their weakened state should the patients be left prey to tricks and deceits such as the forging of their wills. The general populace too had to be considered. Sick men in quarters could be infectious to both the townspeople and to a garrison. Manning money mercy. It is impossible to say which was the dominant factor the three motives for reform were inextricably linked.

This document had the required effect joining with other factors which contributed to the closure of quarters and the establishment of contract hospitals. Another immediate result was an orchestrated outcry by the quarterers at Portsmouth and Gosport who petitioned Queen Anne. The petition contained 47 signatures of which 19 prefaced the surname with widow. It was claimed that in the two towns between 300 and 400 families were dependent on the work which if true attests to a consistent and persistent rate of sickness among the warships in port. In return the quarterers claims that they were fit persons to do the work the Commissioners drew on their personal experience of making payments to landladies in the area. They wrote

For men who had been above ninety days in quarters and the men after all dead and upon examination of the physician and surgeon how men sick of the smallpox and other acute distempers which generally terminate in life or death about twenty days time should be so long kept on the Queen's expense. It was replied that there was a combination between the seamen and their landladies that the medicine should be thrown away and flip punch brandy and such like pernicious liquors administered in lieu thereof so that the relapses occasioned by this disorderly way of living were more fatal and chargeable than the original distempers.

This was a heavy indictment indeed by the physicians of the Board. They were further able to prove the quarterers bad intentions by stating that the women had been offered work as nurses in the forthcoming hospitals but had scornfully refused it.

When the use of quarters gradually increased during the years of relative peace 1720 to 1740 it was logical that the same faults should become evident. Desertion was on the rise. In 1722 ships captains were told that for the future instead of discharging their seamen set sick ashore at the end of a month they were to send a query against their names in their books until they knew what had happened to them. The Sick and Hurt Commissioners were ordered to make the ruling public the reason being the men would know if they leave quarters and abscond they will forfeit their wages and be tried for desertion. Along with desertion costs too were rising. It had occasionally been stated previous years that putting sick seamen in naval hospitals would be more cost effective than the quartering system but no direct comparison seems ever to have been made until 1740 when it was done at the instigation of the Admiralty. The figures spoke for themselves strongly and persuasively

The annual charge of 1000 sick men according to the established system	**£21,526 12 8**
The annual charge of 1000 sick men in a royal hospital	**£13 879 6 8**
The difference	**£7,647 6 0**

So history was repeating itself. The same worries were evident minning money what to

mency what of providing a humane [illegible] care? It was becoming clear that the suffering of ill and wounded men was still being unnecessarily prolonged For example Sir James Barclay the surgeon/agent at Gosport protested in 1740 that it was barbarous to send the sick on shore in such numbers without giving me any previous notice and so late in night that in winter it was often ten o clock before houses could be found for them Some died in their comrades arms while waiting For how long could this be tolerated?

Although these and other deficiencies were identifiable familiar and sadly repetitive it required a unique combination of circumstances a new war a typhus epidemic complaints by the commanders in chief to make the Admiralty change tack but change it did Within a period of five years 1740 1745 the planning of naval hospitals and the eventual dismantlement of the quartering system took place a system which had been part of naval medical organization for 125 years

NAVAL HOSPITALS

Since the history of naval hospitals has never been accorded a separate study information concerning them has been patchy and insubstantial particularly for the years 1650 to 1740, the ninety years leading up to the period of naval hospital building in the mid eighteenth century This lack of knowledge concerning the early hospitals has led to the view that the naval authorities were content to put their sick seamen into back street houses in port towns[4] The situation was more complex than that Small more hospitals were set up during the Dutch Wars 1652 1674 In King William s War 1689 1697 the first naval hospital was established at Plymouth, the forerunner of two more in Queen Anne s War 1702-1713 at Jamaica and Minorca, both purpose built These were part of a major advance made in care ashore namely the creation of the contract hospital system The great asset of this system was that a civilian contractor provided the building beds bedding utensils and victuals for the naval patients together with nursing care The public purse was thus saved the considerable capital expenditure required if the government had assumed these responsibilities Instead the work of the Commissioners for the Sick and Wounded was confined to setting up and controlling a new network of medical and administrative officers [illegible] At home these hospitals [illegible] (500 beds) Plymouth (200 beds) [illegible] (350 beds) and Deal (200 beds) This [illegible] though somewhat diminished continued throughout the years 1714 to 1745 During these years commanders in chief on the Mediterranean and West Indies stations made strenuous efforts to retain what was there and to develop it further resulting in approval for hospitals to be built at Jamaica and Gibraltar in 1740 It was a logical step to make In an expanding Navy the difficulties of caring for large numbers of sick ashore from squadrons operating overseas and returning home repeatedly brought to the fore the great necessity for naval hospitals Therefore the building of Haslar and Stonehouse Hospitals in the 1740s and 1760s was the result of a lengthy and considerable experience of hospital use by the Navy Table 1 3 illustrates this point

There are two reasons for claiming that the pre 1740 naval hospitals were real hospitals If as seems reasonable a hospital can be defined as a building reserved for the treatment and care of the sick staffed by medical men and administrators then these early hospitals certainly were that During Queen Anne s War alone the following appointments were made to seven hospitals four at home and three abroad

Physician	7	Chaplain	10
Surgeon	22	Agent	20
Ast Surgeon	6	Contractor	8
Mate	32	Master Master	7
Dispenser	1	Victualler	2
Ast Dispenser	2	Boatman	3

A further reason for giving these institutions the status of hospitals is that contemporaries referred to them in this way For example Josiah Burchett Secretary to the Admiralty referred to the undertakers [contractors] at the Great Hospitals[5] The phrase Great Ports was the term used at the time to signify the busiest naval stations at Portsmouth Plymouth, Chatham and the Downs It was only logical then that these centres should be the places where the naval hospitals were established and that they too should assume the adjectival Great This usage by Burchett together with other references indicates a growing acceptance in naval circles that hospitals were becoming an established

[illegible]

[illegible] 1665 16[illegible] [illegible] plans for naval [illegible]

Although [illegible] the support of his fellow [illegible] and Secretary to the Admiralty Samuel Pepys, his [illegible] failed probably because of other [illegible] government expenditure. Another request was made in 1678 by Sir John Narborough. The squadron was in the Mediterranean [illegible] Britain's trade against attacks by corsairs. He appealed for a hospital [illegible]

> In continuing intended the [illegible] board [illegible] an number(s) [illegible] bred sickness in the ships besides it's mighty inconvenient for the ship to proceed [illegible] [sic] further service

[illegible]

Table 1
Naval Hospitals 1689–1770
Home Hospitals

Place	Dates	Status
Haslar (I)	1689–c.1745	(I) Government purchased
Plymouth (I)	1700–post 1770	
Stonehouse		(II) Government built
Gosport (I)	1704–c.1745	(I) Contract
Gosport (II) [illegible]	1754–post 1770	(II) Government built
Deal	1704–c.1745	Contract
Rochester	1704–1776	Contract

Foreign Hospitals

Place	Dates	Status
Jamaica (I)	1702–1712	(I) Government built
Jamaica (II)	1726–1743	(II) Contract
Jamaica (III)	1743–1755	(III) Government built
Lisbon	1705–1710	Part contract
Gibraltar (I)	1705–1728	(I) Part contract
Gibraltar (II)	c.1742–post 1770	(II) Government built
Minorca	1709–1716 1718–1756	Government built
Bay of Naples	1718–1720	Contract

Source: Office of Commissioners of Sick and Wounded Seamen *Minutes 1698–1714, 1740–42* ADM 99/1; ADM 99/15. The National Archives, Kew, Surrey. *In letters and orders to the Sick and Hurt Board from the Admiralty 1703–45* ADM/E/1; ADM/E/11. National Maritime Museum, Greenwich, London.

In the [illegible] Crossfield [illegible] Navy Mayl[illegible] subject. They [illegible] writing [illegible] to their [illegible] In the 1690s [illegible] public [illegible] became receptive to their [illegible] complaints. The radical [illegible] lobbying Members of Parliament by bribing the doorkeepers of the chamber to place their pamphlets on the benches where a relevant subject was coming up for debate, which they thus hoped to influence. These various appeals therefore and other similar ones helped to keep the question of the desirability of building naval hospitals in the public domain and in the minds of senior naval officers.

The creators of the Navy's hospitals fall into two categories. Firstly there were the medical staff of the Fifth Commission for the Sick and Wounded Seamen during Queen Anne's War 1702-1713. It was their initiative which designed and developed the contract hospital system, the combination of contractor-supplied buildings and furnishings and government-supplied medical staff and drugs. This system in diminished form continued until the 1740s. Secondly there were the commanders in chief who had both the reason and the power to initiate change. In 1689 the complaints of Admiral Herbert and Admiral Russell that there was nowhere suitable ashore to place their considerable numbers of sick led to the establishment of the naval hospital at Plymouth as we have seen. In 1701 even before embarking for Jamaica Admiral Benbow, drawing on his previous experience in the West Indies, urged the need for a hospital there. On arrival he immediately set one up at Kingston in 1711 at grave risk to his future career. Admiral Jennings began the building of an unauthorized 330 bed hospital at Minorca, seen in Map A, partially funded by loans from officers in his squadron. At Gibraltar the persistent appeals of Admiral Cavendish in the 1720s and Admiral Haddock in the 1730s eventually led to the building of a naval hospital begun in 1741 and housing 1000 patients. At Jamaica, where Benbow's hospital was no longer tenable, Admiral Vernon gave the Admiralty no rest until he had received permission to build the 632 bed hospital was completed in 1744. These commanders in chief were faced with the practical difficulties of how best to care for their sick seamen while operating for extended [illegible] and [illegible] shortage of [illegible] quickly [illegible]. At home the initiative [illegible] organized [illegible] in a head [illegible] Plymouth [illegible] by the [illegible] captains. Their [illegible] letters to the Admiralty [illegible] the creation of sizeable [illegible] patients could be discharged [illegible] time. At Gosport there [illegible] determination to bring about [illegible] to such an extent that the local [illegible]

> but I find the [illegible] whole business for building [illegible] hospital. They will represent the quarters in the worst sense.

The administrators at the Board of Admiralty in London were initially slow to react. Unlike the sea going officers they were included from the viewpoint of patients consigned in hours to the dockside or to nearby farm buildings. They were disinclined to responding to the unusual requests for stores and equipment necessary for the Navy's ashore. The typhus epidemic of 1740-1741 which began among crews of visiting Plymouth ships changed their viewpoint. Frighteningly large numbers of sick were landed on the south coast ports. War had just been declared against Spain. The need to treat these men efficiently and to return them to duty speedily was paramount. These factors forced the acceptance of the possibility of a new order. The Admiralty ordered the Navy Board in May 1740

> to take into consideration the present method of treating the sick seamen in the hospitals [that is contract hospitals] and quarters and whether the same can be put on a better footing and to transmit to their lordships an estimate of the expense of establishing the necessary number of hospitals [navy stations] and of the saving (if any) that may accrue to the Crown by a change of method in the treatment and cure of the sick seamen [navy stations]

A comprehensive programme of information gathering then began on which decisions were made as to the type of hospital required by the Navy.

Statistics quickly revealed that most patients

An Exact Plan [illegible] and Ireland [illegible]

Map [illegible] Mercia 1 15 1726 (BLK Top 74 (39) Herbert 1726 [illegible] Archives ADM 140/1321)

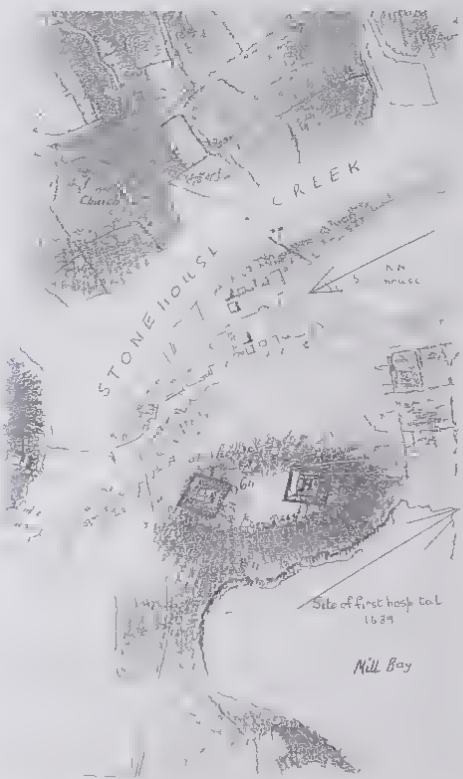
were landed at Gosport Plymouth and Rochester[4] On the busiest day in June 1740 there were 1 897 sick at Gosport 2 003 sick at Plymouth and 600 sick at Rochester These figures helped to decide the sites of the future hospitals one in the south west one on the south coast and one in the east In the event Chatham was preferred to Rochester because of its dockyard and because it was not so far up river[5] But a naval hospital the Melville Hospital was not built there until 1828[6] As to the exact locations within the chosen sites the naval authorities stayed close to areas which they had come to know through using the quarters and contract hospitals in them At Gosport the contract hospital of 1704 was accommodated in the Malt House at a little village called Fortune about a mile from Gosport[7] When permission was received in 1744 for the building of one naval hospital the selected site was part of Haslar farm in the parish of Alverstoke once again near Gosport[8] At Plymouth the 1689 royal hospital was located on the east side of Millbay off the Sound as Map B illustrates At busy times as we have seen houses in the Stonehouse area nearby were used as quarters So it was natural that when approval was granted for a second naval hospital land should be purchased in the same locality principally from the Edgcumbe family In this way Stonehouse gave its name to the new hospital

It is evident that when planning their hospitals the naval authorities primary consideration was the provision of large scale space space to cope with war casualties space to deal with the victims of epidemics space within their own control Initially the Admiralty proposed a 500 bed hospital for Gosport/Portsmouth and ones of 750 beds for Plymouth and Chatham[9] In the event Haslar Hospital begun in 1746 was built to receive 1 800 patients by 1755[10] The capacity of Stonehouse Hospital begun in 1758 was likewise increased from a projected 750 to 1 established 960 beds[11] Staffing levels in the new hospitals were variable as patient numbers increased with the completion of each stage of the building programme In addition there was the ability to lay off staff in quiet periods This was a feature probably unique to naval hospitals for The growing number of voluntary hospitals in London and the provinces would normally have been full to capacity Indeed there seems to have been little if any exchange of views between naval and civilian hospital administrators The Navy after all was operating on a very large scale The total capacity of the five London voluntary hospitals established between 1719 and 1745 was about 2 000 beds[12] Haslar and Stonehouse hospitals between them could provide almost 3 000 beds Naval administrators had to respond to their own financial position to their own requirements for a fast intake of patients possibly in great numbers and an equally efficient course of treatment to return them promptly to duty These pressures were less strong in the world of civilian hospitals Internally the Navy s new hospitals were run by a Council consisting of the physician surgeons agent and steward under the direction of the Commissioners for Sick and Hurt Seamen It was not until 1795 that executive officers called Governors replaced the medical Council after concerns were raised about standards in the hospitals

The seamen s distempers their illnesses that the staffs of Haslar and Stonehouse Hospitals treated remained very much as they had always been This is evident in a list made out by James Lind the first physician at Haslar in which he summarized the cases admitted during his first two years 1758 1760

Fevers	2 174
Scurvy	1 146
Consumptions	360
Rheumatisms	350
Fluxes	245
Total	4 275

It is likely too that the men s medication had not changed greatly There would have been mercury ointment for syphilis elixirs for coughs castor oil tincture of cinchona bark for malaria other fever mixtures perhaps Dover s powder as a sedative Sulphur was a long standing remedy in the treatment of skin conditions Calomel and jalapo were the commonly used purgatives It was not then in this men where the real innovation lay rather it was in the sphere of hospital design and scale of architecture that the Navy led the way at the dawn of the Nelsonian era Its home hospitals were massive for the age Haslar is an immense pile of a building wrote Lind and he was right[13] Almost certainly it was the largest hospital in Europe an impressive symbol of the British government s commitment



Map 2 The position of Stonehouse Hospital to the 1689 naval hospital at Plymouth (West Devon Record Office Pl 355/15 21 (Mf) BLK Top X179

o its sick and injured seamen Stonehouse Hospital was that too but it had something more revolutionary design The original layout was f eleven large detached blocks built round a quare The great advantage of separate blocks was that they gave the opportunity of isolating infectious cases They also allowed a free assage of air between them It was a model which was copied in England in pavilion style ospitals and also in France By the 1760s herefore in the provision of hospitals for its ick the Navy led the way in both the military nd civilian worlds

ONCLUSION

reviewing a century and a half of naval medical care certain features of it become clear ustly the health of seamen did not depend ilely on the medical men At sea it also epended on the quality of the captain s care for clean ship and good food Overseas sick eamen depended on the arrangements the ommanders in chief had made for ccommodation ashore and the speed at which uit and vegetables were re introduced into their iet Secondly institutions outside the Navy ade their own impact The Surgeons ompany was accountable for the standard of mpetence of the sea going surgeons it selected r duty The College of Physicians was esponsible for providing members genuinely iterested in the work of a squadron physician nd the possibilities it gave for educating their ntors On the request of the Admiralty it had lso to give its opinion on the most suitable edicines for the Fleet Thirdly the contribution f the administrators cannot be overlooked In e Dutch Wars of the seventeenth century the xertions of Evelyn and his fellow ommissioners together with the naval ommissioners at the ports kept afloat a system hich was being invented as the wars rogressed In the eighteenth century though the ffort fluctuated it was the steady flow of letters tween the various Boards which ensured that e organization for care of the sick operated is fficiently as possible Fourthly while there ere undoubtedly many physicians surgeons nd mates who worked effectively in the care of ick patients there was only a certain number ho made a great and lasting impact James earne Surgeon General from 1674 to 1689 was ich a one because he provided much needed ontinuity in naval medical affairs and ntroduced in my of the forms by which a seamen s health was improved through the high treatment it was based Another was the physician Dr Richard Lower who in 1691 proposed that existing buildings at Greenwich could be converted to provide a naval hospital The eventual result of his advice was the establishment of Greenwich Royal Hospital for naval pensioners founded in 1694 The contract hospital system was the creation of the physicians and their colleagues on the Fifth Commission for Sick and Wounded Seamen Lasting from 1704 to at least 1744 these hospitals at home and abroad substantially improved the care of sick and injured seamen Thereafter once the period of royal naval hospitals had begun the long and distinguished career of James Lind physician at Haslar Hospital from 1758 to 1783 is most noteworthy His early researches and publications on scurvy fevers and seamen s health in general combined with his devoted clinical care over long periods of stress mark him as one who used to the full the power for good which his position gave him

The final impression of naval medical care 1620 to 1770 is of an organization that provided a comprehensive system of care at sea on shore in ship private house and hospital It is particularly in the realm of hospital care that the efforts of the naval authorities have been undervalued There has perhaps been too much concentration on the building programme of the 1740s to 1760s which produced Haslar and Stonehouse Hospitals and not sufficient recognition of earlier hospitals at Minorca Gibraltar and Jamaica at Plymouth Gosport Deal and Rochester These hospitals were the proving ground the experience gained in them was later put to good use In this way the authorities produced a more complex in depth system than has generally been acknowledged one showing a degree of flexibility in its attempts to react to the very varying situations posed by a Navy operating over a wide area By 1770 it had reached a degree of maturity which would enable it to meet the still greater challenges of the Nelsonian era

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22 On one occasion for example ships captains in the West Indies asked permission to sell the beef they had on board so that the poor sailors [would] be enabled to purchase greens limes etc alongside Admiralty letters *Jamaica* 1713 1729 18 September 1729 Commodore St Lo to the Admiralty enclosing the captains letter ADM 1/3811 The National Archives Kew Surrey

23 Rodger NAM *The Command of the Ocean* p 308

24 Rodger NAM *The Command of the Ocean* p 213

25 Rodger NAM *The Command of the Ocean* p 486

26 The incidence of typhus did not fall dramatically on introduction of slop ships In 1781 Proper washed and dressed in clean clothes new recruits presented a greatly reduced threat to the health of old hands Rodger NAM *The Command of the Ocean* p 399

27 For example Admiral Balchen was told that the sick his squadron would have to wait eight days to be accommodated in the Plymouth hospital and quarters Admiralty Letters *Sick and Hurt Board 1727 40* July 1740 ADM 1/3528 The National Archives The infirmary at Plymouth was later dismissed for neglect of duty Office of the Commissioners of Sick and Wounded Seamen *Minutes 1740 28* August 1742 ADM 99/12 The National Archives

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Surgery at Trafalgar

Sir James Watt KBE

Trafalgar! The vast naval battle fixed in the collective memory of the French. They are the words of Etienne Taillemite a French naval historian and Inspector General of the National Archives of France

Despite the superiority in numbers and guns of the combined French and Spanish fleets at Trafalgar the disparity in terms of health hygiene morale and medical support could not have been greater and reflected the contrasting circumstances of the two commanders in chief Nelson ebullient confident and prepared his strategy shared and agreed with his captains who commanded healthy men Villeneuve the French Commander-in Chief his fleet sickly distrusting the Spanish and discredited and harassed by Napoleon who knew nothing about naval strategy yet insisted on directing operations Napoleon had violently denounced Villeneuve to Decrès the Navy minister as a poor miserable who would sacrifice everything to save his skin and demanded his replacement by Rosily an aging hydrographer quite out of his depth in a sea command Since retorted Villeneuve His Majesty thinks that it only requires character and daring to succeed in the Navy I will leave nothing to chance and broke out of Cadiz to meet the hating Nelson' He was courageous enough declaring that any captain not under fire will not be at his station ' but with his relief already en route and obliged to adopt the traditional line of battle strategy which he knew that Nelson would exploit was deeply depressed The differing psychology of Nelson and Villeneuve undoubtedly influenced the action Villeneuve was right of course for Nelson and Collingwood drove two columns of British ships through the Franco-Spanish curved defensive line splitting off into smaller units to isolate surround and batter groups of enemy ships

SURGERY IN THE ROYAL NAVY

Surgery at Trafalgar depended essentially upon the tradition training clinical experience and ethical standards of the surgeons themselves The training of British naval surgeons was essentially practical based on a seven year apprenticeship [illegible] the Company of Surgeons which held the [illegible] to recruit and examine surgeons for the Navy and recommend to the Navy Office the appointment for which they were best qualified By the Nelsonian period many had either supplemented their apprenticeship by attachments to leading hospital surgeons or had been trained entirely in hospital some acquiring university degrees The naval tradition established through the writings of naval surgeons from the Tudor period onwards emphasised often in contrast to civilian practice the importance of cleanliness and antisepsis

Earlier in the eighteenth century John Atkins who had gained vast experience in the War of the Spanish Succession established sound principles of casualty management including triage or sorting of casualties which together with other naval innovations were not fully appreciated until the wars of the twentieth century He insisted upon methodical preparation polished instruments scrupulous cleanliness and antiseptic surgery' Though artists depicted surgeons in uniform the Nelsonian surgeon commonly changed into clean linen before action The best commanders including Nelson himself were equally diligent ensuring the cleanliness and ventilation of the ship the personal hygiene of the ship's company and their well being through exercise and sound nutrition' As a letter from Nelson shows he shared this outlook giving high priority to health and *Victory* had not a single sick man on the day of battle

FRENCH NAVAL SURGERY

Like their British counterparts French surgeons trained as apprentices but without the control of training exercised successively by the Barber Surgeons and later Surgeons Company in London Held in low esteem their lack of cleanliness and antisepsis led to poor results from surgical intervention and little incentive to undertake it French surgeons did not always wash their hands nor cleanse the wound which was probed with dirty fingers and, in fractures of the skull while British surgeons shaved the

head were meticulous in cleanliness and used the trephine a British invention to remove bone and elevate depressed fractures French surgeons tore off the tissues of the head with dirty finger nails and used the trepan a much less sensitive instrument Surgery observed a recent French historian had scarcely evolved since the 16th and 17th centuries[4] The problem was compounded by the filthiness of the French ships and absence of hygiene among their crews which the testimony of British surgeons confirms The sickness rate among surgeons was in consequence very high and added to the shortage of surgeons from which the French navy chronically suffered[5]

As early as 1722 a school of surgery had been founded in Rochefort which served as a pattern for those later established in Toulon and Brest but its teaching was largely theoretical In consequence the French surgeon was provided with an unnecessary armamentarium of instruments with infinite choice for each operation but with little direction on their use and they had little practical experience in casualty management Multiple blood letting condemned by most British surgeons was widely practised probably to induce collapse and so reduce the pain[6] and surgeons recognising their lack of training were often reluctant to operate To remedy this lamentable situation a school of practical naval medicine was founded in 1783 but was closed by the revolutionaries[7]

The control of naval surgeons differed significantly from that of the British system for while the British were under the benign influence of the physicians to the various fleets such as Nelson's physician Leonard Gillespie with their journals examined by the Company of Surgeons and the Sick and Hurt Board which represented their interests and recommendations to the Admiralty French surgeons were totally subordinate to the surgeon major of their home port[8] Many of these were genuine and out of touch with recent advances They had often secured a place in the naval surgical establishment through nepotism or family connections It suited the government to retain them in senior appointments for it alleviated a pecuniary crisis

Finally the influence of the Revolution was profound A decree of 1803 made it possible to qualify as a doctor in a naval medical school without taking an examination or submitting the usual thesis That together with the general insubordination in the fleet, contempt for all authority and disregard for rank unqualifiedness which the Revolution encouraged seriously compromised the efficiency and morale of the French fleet and its surgeons at Trafalgar

THE CASUALTIES

No accurate assessment of the number of casualties on either side at Trafalgar is possible because of the absence of adequate records On the French side a further difficulty is the number of ships captured or destroyed with large numbers of men unaccounted for or transferred to other ships during the battle For instance *L Indomptable* was torn apart on the coast in the storm after the battle and only 150 were saved of her 1 200 men but these included 500 who had escaped from the *Bucentaure*[9] However Hill using seamen's muster books was able to make a reasonably accurate assessment of the complement killed and wounded in each ship of the British fleet Out of a total of 17 792 there were 453 killed and 1 242 wounded a ratio of killed to wounded of approximately 1 3 similar to that in other actions with the French during that period[10] The number of French casualties cannot be determined accurately Taillemite with ready access to original documents puts the number of killed at 3 400[11] though another notable French historian Dupont increases this number to 4 500

No accurate assessment of the wounded can be made because French official records are limited to a small number of ships surviving capture or destruction and some 8 000 French and Spanish prisoners who included many wounded were taken by the British Casualty statistics from few French ships which survived suggest a ratio of French killed to injured of only 1 2 but even that ratio indicates some 7 000 wounded

At Trafalgar the French suffered from an unusual disadvantage of undermanning together with the combined effects of sickness and ill nourishment. Villeneuve had returned from the West Indies short of food and water and with 1 200 sick whom he had landed at Vigo at the end of July[12] Writing from Cadiz on September he claimed that he was 2 060 men short of complement and that, since leaving

oulon on 30 March he had left 1 731 men in anous hospitals and had suffered 311 esertions[5] Losses of over 2 000 seamen isease ill health and undermanning were arcely ideal pre conflict or pre operative onditions The Spanish who detested the rench were in little better shape heavily ndermanned with few trained seamen their omplement consisting mainly of pressed men nd soldiers[6] In addition the Combined Fleet ad recently (22 July) fought an action off Cape inisterre with 65 French killed and 144 ounded and 17 Spanish killed and 35 wounded Total of 261 casualties[7] French official cords give the strength of the eighteen French ips as 10 608 seamen and 3 411 passengers ainly army gunners a total of 14 019 to hich must be added the Spanish complement of 1 847 in fifteen ships providing a grand total 25 866 As we have seen up to 4 500 French ere killed and over 7 000 were injured

Little information is available from British and rench sources on Spanish losses but Rear dmiral Escano Gravina s Chief of Staff timed 1 031 were killed and 1 373 wounded am a probable underestimate[8] After the attle *HMS Leviathan* was crowded with about 00 Spanish prisoners of whom 90 were ounded and her surgeon William Shoveller und several with tourniquets on their different reatments which had been applied since the ction four or five days elapsing consequently said most of the limbs were in a state of urification or approaching it In four of these ases he was obliged to amputate (two arms and wo thighs) While the arm cases recovered well e two who had thigh amputations developed angrene of the stumps since the prolonged pplication of the tourniquets had destroyed the cal circulation and they died from toxaemia on e third day after operation *Leviathan* had only ur of her own crew killed and 27 wounded but Gibraltar the slightest injury or scratch came a foul spreading sore On the passage ome virulent ulcers respiratory infections and arrhoeas cluttered the sick bay and illustrate e enormous demands on the body s reserves by naval action like Trafalgar which mpromised the immune system and made the rticipants susceptible to opportunistic fections

YPES OF INJURY

nnon balls produced the most severe injuries and a direct hit could cause havoc Nelson s tactics dividing the French line into three segments to promote a grand melée between groups of ships meant that the vulnerable French sterns were swept by English broadsides the deadly carronades ideal for close action sweeping shot through stern cabins and gun decks to kill and maim gunners overturn guns and set cartridges and loose gunpowder alight Such was the experience of *Bucentaure* Villeneuve s flagship the first to experience Victory s onslaught[9] followed by that of *Tenerane* which killed or wounded more than 200 on board the *Redoutable* with a single broadside in her attempt to divert *Redoutable* s fire from the *Victory* As the naval physician Sir Gilbert Blane had pointed out damage caused by cannon balls depended largely upon their velocity At short range they punched a clean hole through the ship s side but at longer range tore murderous splinters from the hull to act as secondary missiles[10] These were either large contusing ugly flesh wounds involving deep muscles or compound fractures often requiring amputation or very small impaling the mouth cheeks or eyes of gunners crouching over their guns Tetanus was a common complication and was accompanied by a high mortality

Musket balls caused deep penetrating injuries breaking bones and severing vessels and nerves en route a fate which befell Nelson The *Redoutable* being much smaller than Victory provided an advantage for marksmen in the mizzen top not more than 15 yards from Nelson who was their target

THE BALL THAT KILLED NELSON

According to Beatty his surgeon a ball struck the forepart of his Lordship s epaulette and entered the left shoulder immediately below the shoulder blade which it slightly fractured It then descended obliquely into the thorax fracturing the second and third ribs and after penetrating the left lobe of the lungs and dividing in its passage a large branch of the pulmonary artery it entered the left side of the spine between the sixth and seventh dorsal vertebrae wounded the spinal cord and fracturing the right transverse process of the seventh vertebra made its way from the right side of the spine directing its course through the muscles of the back and lodged therein about two inches below the inferior angle of the right scapula

On rem[illegible] the ball [illegible] gold lace and [illegible] the epaulette [illegible] with a small piece of his Lordship s coat, was found firmly attached to it [illegible] His post mortem examination included an examination of the body organs which Beatty pronounced totally free from disease despite Nelson s frequent complaints and fears for his health[9]

Nelson is not the only victim of the hail of bullets forty men followed Nelson to the cockpit with soft tissue wounds and compound fractures calling Beatty away from his famous patient after it became evident that his wounds were fatal Nelson himself recognised this for on reaching the cockpit he told Beatty that he could do nothing for him that he had but a short time to live for my back is shot through Beatty reported that he felt a gush of blood every minute in his breast that he had no feeling in the lower part of his body that his breathing was difficult and attended with very severe pain about that part of the spine where he was confident that the ball had struck They were all symptoms consistent with Beatty s report on his autopsy

GRAPESHOT FIRE AND BOARDING INJURIES

Gunners on both sides often double loaded their guns with round shot and either grapeshot shot or langrage (scrap metal or iron bars) grapeshot is mainly personnel missile langrage to destroy rigging and sails They were most effective at short range Both caused multiple injuries soft tissue wounds injuries to internal organs and compound fractures A painting by the French artist Devcamps who visited the scene graphically depicts the destruction wreaked by British grapeshot on the French ship *Ceres* in 1809 Casualties include head injuries a fractured jaw a grave abdominal wound an arm injury and the surgeon is shown applying a pad and bandage to a wound of the chest[7] At Trafalgar grapeshot accounted for numerous compound fractures and soft tissue wounds in various areas of the body many requiring amputation The double loading of guns and the rapid rate of fire achieved by British gunners caused numerous accidents Gunners sustained deep contusions from the gun s recoil after firing or fractures and dislocations through being thrown to the deck Feet and hands were crushed and burns were caused by gun explosions fragments acting as secondary missiles with widespread limb injuries when guns overturned

Fire the most feared disaster in naval warfare caused by the ignition of cartridges or loose gunpowder lying on the deck was often the result of burning wads blown back on deck after firing the shot Fires caused either superficial flash burns or deep full thickness burns of the skin often complicated by other injuries The Nelsonian surgeon had inherited a sound understanding of burns injuries from a succession of naval writers since 1558 when William Clowes a naval surgeon correctly identified the different degrees of burns and the different treatment which each required[10] In the Nelsonian period, pain was alleviated by opium abundant fluids were given and cold water was the initial dressing followed by emollient oils turpentine an antiseptic which sealed the area Later a digestive ointment was applied to remove the crust which subsequently formed

Lastly there were the characteristic injuries sustained by boarding parties Cutlass wounds slashed the wrist obliquely dividing blood vessels and nerves requiring the immediate arrest of haemorrhage and repair of nerves Tomahawk wounds were limited to the face and head might slice the cheek or scalp from the underlying bones or fracture the skull requiring exploration a trephine and perhaps elevation of a fracture Pikes were often run through the chest and directions were given for the adequate drainage while a bullet or rapier was more likely to wound the throat with haemorrhage difficult to control[4] Under such circumstances Nelsonian surgeons either reduced the blood pressure by blood letting or used a turpentine preparation recommended by James Yonge a surgeon at Plymouth naval hospital which was both haemostatic and antiseptic

The only detailed analysis on the English side is found in the journal of William Beatty surgeon of *HMS Victory* but the French National Archives contain valuable reports from the commanding officers of eleven ships of the French squadron which include their perception of the battle the number of killed and injured and in five ships the nature of the wounds and the missile responsible The *Bucentaure* lost all her masts and their debris littered her starboard side the only side manned obscuring the view and

limiting the effectiveness of the gunners a large number of whose guns were dismounted events succeeding each other so rapidly that no accurate account of the killed and wounded could be made but 274 men were known to be missing of whom 65 perished in the *Redoubtable* which was lost on the coast with only 2 officers and 178 men surviving the shipwreck[2]

EXPERIENCES OF INDIVIDUAL SHIPS

Algésiras suffered heavily from the guns of the *Neptune* and was forced to crash her bowsprit into *Temeraire*'s timbers to prevent her rolling the one ahead of her Centre Admiral Magaon displaying the most heroic sang froid to prevent the English boarding They were always pulsed with great loss After three hours the mizzenmast fell on deck and Magnon who had already sustained wounds in the arm and thigh was killed by a cannon ball Then fire took hold of the ship and the mizzen and mainmast fell across the guns whose crews helped to extinguish the fire With few guns operable she was forced to surrender There were 216 casualties 74 killed and 142 wounded Cannon musket balls were responsible for 26 injuries shoulder 3 arm 5 thigh 7 knee 2 leg 2 foot 1 eye 1 abdomen 1 back 1 and 1 unspecified splinter wounds accounted for 17 shoulder 5 arm 4 thigh 1 leg 3 cheek 2 and eye 1 Since splinter wounds followed cannon balls it is not surprising that their distribution should be similar The weapons were unspecified in 77 other wounds Thirteen amputations were performed 6 of the thigh 1 of the leg and 4 of the arms but the outcome unfortunately is not recorded[10]

L'Algesiras provided the most detailed list of injuries and their causes but some missiles are mentioned in other reports particularly that of *Argonaute* which sustained 162 casualties 44 killed and 118 wounded Of these 8 were caused by cannon balls 5 by musket balls 18 by splinters and 9 by grapeshot wounds by cannon musket ball or by grapeshot being the more numerous Splinter wounds which had a similar distribution to those of *L'Algesiras* were however light except in one case probably because cannon balls had been fired at longer range imparting a lower velocity to the splinters *Argonaute* also reported 9 burns cases 4 of which were severe and general and 12 bayonet wounds all flesh wounds[9] The returns of *Le Pluton* which had lost a gap behind the *Bucentaure* so successfully exploited by Nelson are incomplete but 5 amputations were carried out with only a single survivor a mortality rate of 80%[10] The casualty list of *Le Pluton* also deserves comment for there was some doubt about whether her captain Cormas had given all the support of which he was capable She had 59 killed and 128 wounded but examination of the casualty list reveals that it was increased by 57 abrasions and contusions[5] no doubt an attempt by Cormas to prove his commitment

Unfortunately *Le Redoutable* whose valiant captain Lucas was wounded could provide few details of casualties The official report claims that as *Victory* approached his men led by midshipman Yon and four marines who had climbed up one of *Victory*'s anchors rushed forward to board *Victory* and fought Nelson himself at the head of his men At that point a broadside from the *Temeraire* caused such carnage that the boarders retreated to man the guns They were later dismounted Then 8 cannon and a carronade exploded and fire consumed the wheel making surrender inevitable after an action described as perhaps the most bloody and most stubborn of all those which have honoured the valour of the French Of her 643 men 372 were casualties that is over 80% of whom 300 were killed and 222 gravely wounded Clearly they included boarding injuries compound fractures and serious burns According to the report the ship was pierced in all parts by cannon balls which at the end of the battle penetrated into the forecastle where they killed many of the wounded There was only time to save the captain and men who had not been wounded before the *Redoutable* foundered but 50 wounded who went down with the ship were able to cling to the wreckage and were saved[5]

On the British side the only surgeons journals that survive are those of Beatty for *Victory* which is precise and informative Shoveller of the *Leviathan* overwhelmed by 90 wounded among the 500 Spanish prisoners she carried and Fullerton of the *Prince* who was occupied with the greater part of *Santissima Trinidad*'s numerous wounded as well as 11 of the French ship *L'Achille*[4] but failed to describe his treatment The extent of the punishment which the *Santissima Trinidad* received at British hands can be gleaned from the report of Midshipman Badcock who boarded her after the action Her

beams were covered with blood brains and pieces of flesh and decks littered with the dead and dying some without arms some without legs *Bellerophon* which at one time was attacked by four enemy ships had a ferocious battle with *L Aigle* and repulsed repeated attacks by *L Aigle* s seamen to board her On one occasion as French sailors rushed across *Bellerophon* s spritsail yard one of her sailors released its brace to hurl the attackers into the sea below while other boarders clinging to the rail had their hands beaten until they fell away to be crushed between the ships or drowned in the water The gunports were so close that hand to hand fights broke out through the gunports with ramrods and cutlasses and the French lobbed grenades through the ports killing injuring or burning 25 men Finally *Bellerophon* sustained 150 casualties 27 killed and 123 injured while *L Aigle* s captain was mortally wounded with 276 of his men casualties British officers taking over French ships after the battle found decks littered with bodies and scuppers flowing with blood [6]

THE SURGICAL JOURNAL OF HMS VICTORY

Beatty s journal faithfully reflects British naval surgical practice as evidenced by numerous surgeons journals relating experiences at the battles of the Nile Camperdown and Copenhagen He closely followed the recommendations of the best writers on naval surgery and his Trafalgar record reveals that he was a competent surgeon Compared with *Redoutable* *Victory* s casualties were light 53 killed and 102 wounded He lists 93 of his 102 wounded describes each injury and its surgical treatment and often the outcome which caused it, later accounting for the discrepancy by the fact that many of those who were slightly wounded did not apply for assistance till after the public return of killed and wounded had been transmitted to Admiral Collingwood which therefore reports a smaller number than here stated It was in larger from the attitude of the ship s company of *Le Pluton*[7]

Apart from Nelson himself musquet balls accounted for 10 injuries causing 7 compound fractures of the limbs Two were wounded in the abdomen one of whom died apparently from injury to an internal organ and one wound of the thigh resulted in death from tetanus Grape and canister shot caused 3 compound fractures of the arm 1 requiring amputation and a penetrating wound of the chest leading to death from internal haemorrhage There were 14 splinter wounds mostly of the limbs and face but with only 1 compound fracture The weapon responsible is not mentioned in his description of the remaining wounds the majority of which affected the limbs but included 2 head injuries Most were of the soft tissues but there were 1 compound fractures requiring 11 amputations of whom 3 died One of these deaths followed hazardous operation near the hip joint and two from tetanus rather than Beatty s surgery Nevertheless his mortality rate for amputation (27%) was extremely low by contemporary standards Fifty five of *Victory* s men were killed but only 6 of the 102 wounded died mortality rate of only 6% Five died on board and one subsequently at the naval hospital in Gibraltar Beatty treated them all on board except for five of the worst cases which he left at Gibraltar hospital When *Victory* paid off in January 1806 only 5 patients had not recovered from their wounds It was a record of which Beatty could be proud and a triumph for British naval surgery He noted that not one casualty from accident occurred during the engagement which he attributed to the discipline and established regulations on board [8]

In his book on Nelson s death Beatty provides further information Before breaking the line *Victory* suffered very severely without firing single gun and had 70 killed and 30 wounded from enemy fire She then came so close to *Redoutable* s hull that the muzzles of her guns came into contact with the enemy s side and her sailors drew pails of water through holes created by *Victory* s shot, to extinguish the fires in *Redoutable* [9] He also noted that Nelson always refused to put musketry in the tops because of the danger of setting fire to the sails a fate which befell *L Achille* which exploded in provide dramatic end to the action by hurling high into the air timbers and bodies to fall on surrounding ships There were 516 casualties prior to the explosion in the explosion and throughout drowning

Immediately after *Redoutable* s surrender Midshipmen Ogilvie and Collingwood took charge of her and were joined by 1 midshipman from *Temeraire* when French ships of the van commanded by Amiral Dumanoir who had kept conspicuously out of action in the van began

ing indiscriminately in both English and rench ships and a ball took off the idshipman s leg The French ordered their rgeon to give him immediate attention and his g was amputated He would have fared better board *Victory* under Beatty for he died the me night[7] Justice however was done for umanoir s squadron was afterwards captured Sir Richard Strachan as he tried to escape apoleon ordered an inquiry into Dumanoir s adron which found that Dumanoir had failed engage the enemy closely and had shown too uch indecision in all his manoeuvres

IVILIAN COMPARISONS

at how did naval surgery at Trafalgar compare ith contemporary civilian practice? In 1849 e French surgeon Malgaigne claimed that the sults of major amputations had for long been onsidered the most reliable means of judging e practice of surgery generally Amputations of e thigh were the most difficult and hazardous d carried a high mortality in civilian hospitals t the Hotel Dieu in Paris in 1830 Menière arried out 11 thigh amputations with 9 deaths a ortality rate of 80%[8] Most civilian statistics d most of those of the French from Trafalgar owever do not indicate the site of operation d since arm and forearm and even lower leg mputations carried a much lower mortality than ugh amputations statistics can be misleading d comparisons invalid For instance the rgeon of *Le Neptune* carried out 5 amputations d only 1 man survived the operation a ortality rate of 80% but the site of the injury is t stated and no fractured femur is listed ggesting that no thigh was involved The ortality rate was therefore excessive even by ench standards[9] Malgaigne commended arrey Napoleon s surgeon as the most ccessful of our surgeons yet conceded that en he lost 7 patients following 16 major mputations at the Hotel Dieu and that upuytren another eminent surgeon had lost 17 t of 25 amputation cases[10] The situation was tle better in England at that time The overall ortality from amputations for trauma at the ndon Hospital between 1852 and 1857 was 8% and rose to 70% for lower limb mputations[11]

At Trafalgar Beatty carried out 5 amputations the thigh Only 1 died following the eration having sustained a great loss of tissue d 2 died subsequently of tetanus If the tetanus ases are excluded only 1 died from the operation reducing his mortality rate from 60% to 20% Moreover Beatty performed a further 6 amputations without further deaths that is 11 in all with an overall mortality rate (including the tetanus cases) of 27% or 9% if the tetanus cases are excluded He was a conservative surgeon and treated several compound fractures successfully without recourse to amputation It says much for his clean antiseptic technique[12] Beatty s results should be compared with those of civilian hospitals in Britain where in 1800 it was claimed that 40 to 50 per cent of patients died under surgical operations The contrast is even more stark when his record is compared with that of Glasgow Royal Infirmary for the years 1795 1838 when the overall death rate in 72 cases of amputation was 51 3% rising to an astonishing 91 6% in 12 cases of amputation of the thigh a single survivor[13]

Beatty s results therefore compare very favourably with those of contemporary civilian surgeons but they merely reflected the high standards achieved since John Atkins had laid down the principles for success Moreover there is not a scrap of evidence in naval journals for the well worn myth that patients were given a swig of rum and a leather pad to bite on to relieve the pain In fact naval surgeons used opium liberally and some appeared to have given it before operation[14] It is therefore abundantly plain that British surgery at Trafalgar was not only superior to that of the French but that it achieved significantly better results than that of civilian surgeons

THE TOLL

Nelson s victory at Trafalgar was overwhelming[1] Despite the enemy s superiority in ships guns and men the combined French and Spanish fleets sustained far more casualties They lost almost half of their complement in killed and wounded against a mere 9 6% in the British fleet as well as 22 of their ships or 66 7% in fact the British did not lose a single vessel

All commanders in chief lost their lives Nelson in a blaze of glory and lasting honour Gravina the Spanish admiral died from his wounds and the French admiral Villeneuve in ignominy and obscurity He was captured by the British and released soon afterwards disembarking at Morlaix on 11 April 1806 From there he travelled to Rennes taking a room

in the Hôtel de la Paix [illegible] to his friend Decrès who was Minister of the Navy and Colonies requesting an [illegible] with Napoleon. Decrès replied that Napoleon had not yet taken a decision but assured Villeneuve of his support. Then the axe fell. Napoleon refused to see him and banished him to his estate in Provence. On 22 April Villeneuve was found dead in his hotel room. A letter to his wife by his side: 'I am alone here. he wrote, cursed by the Emperor disowned by a minister who was my friend, charged with immense responsibility for a disaster which has been attributed to me. I must be an object of horror to the whole world.'

The official verdict was suicide, but Villeneuve was found with six dagger wounds in his heart, scarcely self inflicted *coup de grâce*. Had Napoleon feared the disclosure of his own role in the defeat at Trafalgar?

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The Most Triumphant Death

The Passing of Vice-Admiral Lord Horatio Nelson 21st October 1805

Mr M Crumplin FRCS (Eng) FRCS (Ed) – Specialist in Napoleonic Medical History

Having survived numerous ailments and injuries Horatio Nelson died fighting the Franco-Spanish fleet in the autumn of 1805 off Cape Trafalgar A musket ball fired from the mizzen top of the 74 gun Redoutable by one of Captain Lucas's crouching marksman struck the Admiral on the quarter deck of HMS Victory at approximately 1 15pm

The problem for severely wounded sailors was that in the main they were much nearer surgical assistance than their colleagues in the army This had the disadvantage of delivering to the ship s surgeons victims who were beyond help yet still alive Such was Nelson Most severely wounded soldiers would have expired from this sort of wound before they reached sneecom

Nelson knew he was mortally injured telling his flag captain as knelt on the quarter deck of Victory supporting himself on his left hand They have done for me at last Hardy My backbone is shot through Mr (as he was then) William Beatty was later forced to admit to his Commander-in-Chief My Lord unhappily for our Country nothing more can be done for you

Nelson may well have recalled the case whic had troubled him of a seaman James Bush o Victory who had taken thirteen days to di following a spinal injury in July 1805

Beatty as others, had recorded some clinic details of the great Admiral s passing in t cockpit on the ship of HMS Victory He al performed Nelson s autopsy on that ship H findings comments and the patient s signs a symptoms coupled with the circumstances of h wounding perhaps deserve further scrutiny

If the shot was fired from around 20 metres, the energy transfer was around 2 Joules a relatively low figure by today standards (Fig 1) One hundred Joules w sufficient force to shatter the shaft of an adu femur

Having undressed the Admiral Beatty s initi assessment revealed no exit wound and refrained from passing a probe in to Nelson s che

The Admiral s clinical features were pali some difficulty in breathing weakness par

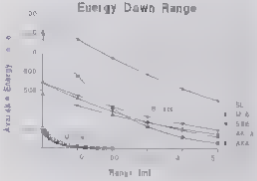

Fig 1 Energy transfer in modern weapons compared with early 19th century smooth bore musket (left) Australian energy and range of British and French muskets (right)

ampulated lower limbs thirst and anxiety – the
ter concerning the outcome of the action and
he care of his family He was once asked if his
ain was great He replied Yes but I shall live
alf an hour longer yet Interestingly there
eems to be no evidence of his being offered any
udanum/opium as after his amputation at
enerife in 1797

The ball had entered very much from the left
ide, chipping the tip of the acromial process
therwise leaving his shoulder intact The ball
assed through the second intercostal space
arring the second intercostals vessels, lying just
elow the rib

Here it ripped the lung parenchyma, causing
leeding and air leak.

The ball probably injured one or two
ronchopulmonary segments of the left upper
nd at least one in the lower lobe of the left lung

He might have been markedly breathless with
larger pneumothorax but neither witnesses on
e orlop nor Beatty at autopsy commented on
is He did remark to the surgeon that his
reathing was somewhat difficult. Nelson also
oticed a "gush of blood every minute in his
hest This was not a pulsating, egress of blood
om low pressure pulmonary vessels merely a
uid shift in an air space in the left thorax

Fig 2 Nelson [illegible] left lung [illegible] the ball [illegible] pulmonary [illegible] the [illegible] respiratory

Surprisingly he did ask his steward Chevalier at one stage to turn him onto his right side probably to ease his pain This did not help his respiration and might have caused any blood and secretions in the left main airways to drain into the right bronchus It was noted that after this his breathing became oppressed

Fig 3/4 [illegible]

He died at around 4 30pm in the sale knowledge that his fleet had gained a monumental victory

The post mortem findings were informative The missile crashed an through the left sixth transverse process injuring the sixth intercostals and then traversed the spinal canal transecting the Admiral s cord Finally it hit the right seventh transverse process and came to rest two inches or so behind the inferior spine of the scapula

An autopsy was performed on the Victory on the 11th December en route from Spithead to the Nore in the estuary of the Thames Beatty s opinion was that a large branch of the left pulmonary artery had been severed and that this being so near the heart despite the relatively small amount of blood in the left thorax was the direct cause of death

Three observations appear to rule against this conclusion Firstly there wasn t much of an effusion in the left chest secondly the shot being so literally directed it likely missed the larger vessels and finally the great man took around three and a quarter hours to die

Fig 5 Transverse section through the thorax showing the path of the missile (black line) Had this been a high velocity bullet round the wound would have been infinitely disrupted

The low blood pressure was a consequence of hemorrhage from soft tissues intercostals vessels and paravertebral veins was with some parenchymal lung collapse enough to reduce the pulmonary blood loss further The pressure in the pulmonary arteries is not high anyway – around 10-20 mm Hg

Thus, the cause of death was due to blood loss from multiple sites The spinal cord transection then compounded the severe and fatal hypotension

The missile most likely a 20gm lead Charleville ball ripped off some of Nelson s left epaulette and carried some silk padding deep into the wound The ball was indented either through striking the acromial tip a rib or the vertebral structure

Fig 6 The fired ball indented by striking bone (bottom left) with detached silk padding and bullhole of the epaulette of Nelson s coat

The extracted ball was given to William Beatty by Captain Hardy and it was then through Beatty s brother presented to Queen Victoria in 1842 It now resides in Windsor Castle

Could Nelson have had better treatment? He might had he requested have had some pain relief Maybe he did not want any clouding of his sensorium at a time when the outcome of the greatest naval conflict of the Napoleonic war was not yet determined

A bronchotomy tube could have been inserted into his chest to relieve any pressure from bleeding or air leak The bleeding might well have then just continued anyway

Had he survived by some good chance he would have suffered all the indignities and discomforts of paraplegia with pressure sores and renal failure Besides in heavy load c

acteria had been driven into his chest and
ertebral column

There would today be survival potential Had
reached an accident and emergency
partment his airway would have been
rotected chest drains would have been inserted
d intravenous fluids given If haemorrhage had
ontinued a thoracotomy with securing of
eeding vessels and repair or resection of lung
ssue performed Nelson s paraplegic existence
ould have been prolonged with catheterisation
ng of his skin limbs bladder and bowel and
her appropriate therapy given as necessary

In 1805 however had Nelson survived even
r a short while Beatty commented though
s existence protracted even for that short
riod would have been miserable to himself
d highly distressing to the feelings of all
ound him

Following Nelson s death King George the
urd commented at one stage to the new Earl
lson William Nelson s brother He died the
eath he wished" Nelson did not wish to die but
ew the chances he took led to great risk of
s These chances were a mark of his style of
adership

His death at the greatest achievement of his
ort life was one of the reasons for his eternal
roism

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Dentistry in Nelson's Time

Surgeon Lieutenant Commander (D) Kirsty Verney Royal Navy, SO2 Dent DMed Ops

As he lay dying in the cockpit of HMS Victory during the Battle of Trafalgar on 21 October 1805 Nelson was twice visited by his close friend and fag, aptum Thomas Hardy. When the moment came for the two men to part for the last time Nelson then very close to death asked Hardy to kiss him. Hardy kissed him on the cheek. 'Now I am satisfied,' said Nelson. 'Thank God I have done my duty'

The Nelson Encyclopaedia by Dr Colin White Chatham Publishing London 2002

Would Hardy really have wanted to kiss the Admiral? With a hundred years to go before the first dental surgeons were employed by the Royal Navy it is unlikely that Nelson was ever reminded of the virtues of proper brushing! Or was he? Lady Hamilton once wrote to him regarding the care of her son Josiah: *'Do make him brush his teeth not emissions but upwards and downwards'* we could therefore assume that some dental awareness existed certainly in the upper classes.

Dental expertise however would not be formalised in the RN until 1920 when the Royal Naval Dental Services (RNDS) was formed. Until then dental care was provided by the ships surgeons who in peacetime were responsible for a multitude of disciplines spanning from delivering sailors' children to extracting their rotten teeth without the availability of anesthetic! In war of course precedence was given to caring for those with acession of limb or eye losses. Moreover these general practitioners were not dentally trained and therefore treatment was limited to extraction abscess lancing and the scraping away of granulomas and dead gum tissue. Sadly it would seem that these surgeons relished their stats preferring to delegate the task of extracting teeth to the untrained sick berth stewards in fact many extractions took place without the knowledge of the ship's surgeon the level of malpractice unthinkable these days.

Sir John Sinclair however was not concerned. In his article 'An Essay on Longevity' published in the Naval Chronicle 1803 he identified that out of 96 examinations of naval pensioners (over 80 years old) 21 had no teeth at all and of the remaining pensioners 6 had decay present. In his conclusion he identified that although some dental care had been available it had been woefully inadequate.

The lack of professional dental care was not solely a naval problem. By 1800 there were still relatively few true dentists in England records show perhaps 40 operating in London with only 20 or so in the rest of the country[3] with no documentary evidence that any practiced within the RN. Indeed it was due to the Napoleonic Wars that many French and German dentists settled in Britain boosting numbers to approximately 700 by 1850[3].

Until the Dentist Acts of 1858 and establishment of the Dental Register in 1878 dentistry was unregulated and unethical with no legal or professional control to prevent malpractice and incompetence. Only the wealthy could afford the services of a qualified dentist if they could find one. Other less privileged members of society enjoyed dental treatment at the hands of barbers blacksmiths and market place tooth drawers.

In fact the poorer members of the population would sometimes sell their own teeth to dentists who would use them to make dentures for the rich who suffered dreadfully from dental decay as a result of their high refined sugar intake. In this time many types of denture were made from real human teeth because the use of whalebone ivory or other substitutes were expensive and

me consuming. Every dentist required a good ock of sound non carious human teeth which ere also taken from hanged convicts raveyards mortuaries and battlefields the attlefields of Waterloo in 1815 providing so any healthy young men's teeth the dentures ecame commonly known as Waterloo Teeth In addition to dentures teeth were also transplanted directly into the mouth a procedure hat worked only a third of the time but equently transmitted syphilis [9]

By the end of the 18th century training of ival surgeons was developing a pace many ow attending the newly established medical hools in Aberdeen Glasgow and Edinburgh It possible that these practitioners had access to e works of the distinguished surgeon and atomist John Hunter (1728 1793) whose ublications The Natural History of the Human eth (1771) and Practical Treatise on the iseases of the Teeth (1778) revolutionised the actice of dentistry - indeed the first course of rial lectures had been established at Guy s ospital in London in by the end of the 1700s [10]

During the Eighteenth Century the modern, entific study of dentistry had also progressed pidly on the European mainland Pierre auchard (1678 1761) joined the French Navy at nder the tutelage of Alexander Poterlerat a ival surgeon expert in the diseases of dental gans Fauchard was to become known as the ther of modern dentistry with the publication Le Chirurgien Dentiste (The Surgeon entist) in 1723

Despite the availability of these academic xts it is difficult to gain insight into the level of actical expertise and equipment in general use hilst waterloo teeth ivory and later porcelain ntures may have been available to the high ciety practitioner this was not dentistry allable to the working classes or Jack The chorn (made in the shape of the bird s beak) eth key and gum lancet were used by those actising dentistry however the blacksmith ten wrought his own forceps and even the ffical instruments often caused great pain and mage when used [11]

In addition to well trained naval surgeons by 800 the Navy had made other medical advances ith dental health implications Now a latively rare disease found mainly in babies junk food addicted teenagers and the elderly Scurvy was a common debilitating and often fatal disease which was the scourge of the mariner into the late 1700s The virtual eradication of scurvy in the RN by 1800 was the product of campaigns by James Lind (A Treatise of the Scurvy 1757) and Sir Gilbert Blane to introduce citrus fruit consumption to the sailors Recognition of the importance of Vitamin C to the production of collagen was a major step forward for the general and dental health of sailors who were now being routinely referred to as limeys a reflection of the lime juice they consumed to keep scurvy at bay This momentum has been maintained in the field of dentistry and medicine so that now 200 years on dentistry is unrecognisable from Nelson s time

It has been established that in 1805 professional dental treatment was scarce potentially only available to the rich upper classes with no regulation of the profession and treatment limited to pain relief With other fatal diseases such as yellow fever typhoid and malaria rife it is also unlikely that dental health was a high priority especially as treatment was often so painful and debilitating Dental health awareness and prevention was a thing of the future not understood by the learned medics let alone the general public Certainly it was the malpractice and sidelining of dentistry which led to the eventual recognition of the importance of regulation and specialisation and the eventual formation of the RNDS

In 2005 we have a well informed and healthy patient population with expectations for dental care that Nelson's men could not have dreamed of Jack today has the benefit of better access to care than his civilian and historical counterpart A modern sailor does not have to worry about the NHS access issues that face the general population or the rising cost of dentistry

socio economic [illegible] of dentistry in the Armed [illegible]

Dental care is now [illegible] prevention and the range of treatment available is vast. With the advent of antiseptics, antibiotics, analgesia and X rays, dentistry has developed from a barbaric sideshow to a professional, regulated and respected aspect of medicine. As a result the dental health of the Royal Navy is at a level unthought of in Nelsons time.

I would like to thank Surgeon Captain Tim Hall Royal Navy (Rtd) and Mr Mick Crumplin FRCS for all their time, knowledge and guidance in the writing and review of this article.

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An Observational Study on Diagnoses of 3,233 Gulf Veterans (Op Granby 1990-91) who attended the Ministry of Defence's Medical Assessment Programme 1993-2004

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SUMMARY

Background This is the result of an observational study on 3 233 Gulf veterans who have attended our medical assessment programme We wanted to determine as a result of in-depth interviews full medical examination and appropriate investigations whether there was any unique Gulf war related medical condition

Methods Over a period of 10 years, 3 233 veterans have been assessed All diagnoses have been made according to ICD 10 classifications All psychiatric diagnoses have been confirmed by consultant psychiatrists

Findings 75% of veterans were well Of the 25% unwell 83% of ill health was accounted for by a psychiatric disorder 3% of veterans had organic conditions which could be linked to Gulf deployment The most common of these were respiratory disorders followed by digestive disorders injuries and skin disorders Only 11 of these cases could be linked to the use of medical countermeasures A further 51 cases (41 respiratory disorders 6 infections 2 skin disorders and 2 eye conditions) could be linked to environmental conditions

Interpretation All veterans seen with health problems could be identified as per ICD 10 classification of disease We did not find any medically unexplained conditions We found no evidence of a unique Gulf War Syndrome

INTRODUCTION

We have already published our clinical findings on the first 3 000 veterans who attended the Gulf Veterans Medical Assessment Programme (GVMAP) The first of these papers addressed principally the symptoms with which the first 1000 Gulf veterans presented at GVMAP between October 1993 and February 1997 The second paper compared similar findings with the 2nd thousand veterans presenting between February 1997 and February 1998 Firmer diagnoses were made in this group as a result of considerable research that had by then been published about Gulf War illnesses The third paper addressed the issue of whether any unusual pattern of disease or unusual diseases were emerging amongst Gulf veterans and whether there were any findings to support a concept of a unique Gulf War Syndrome and found none It was also possible to explore in that publication whether there were any changing health trends between the three 1000 cohorts who had attended GVMAP over almost a decade and none was found

Elsewhere we have analysed the results of investigations on this same group[4] We have also addressed the specific problems of post traumatic stress disorder (PTSD) in a cohort of these veterans[5]

Here we focus specifically on diagnoses amongst Gulf veterans attending GVMAP between 1 October 1993 and 31 May 2004 all files having been reviewed and updated as a result of new information obtained We have also specifically addressed the issue of whether there is any link between Gulf service and diagnoses made

This programme provides the largest analysis

of Gulf [illegible] the interview [illegible] and outcome of investigation [illegible] personnel deployed to the Gulf [illegible] 3 233 (6%) have attended GVMAP

The cause for unique Gulf War Syndrome was proposed as a result of research by groups in 1997 [illegible] However the validity of the results of such research has been seriously questioned[illegible] and no satisfactory answers hitherto put forward

It is clear now that interest in this programme is dwindling no doubt as a result of a considerable amount of research indicating there is no such condition as a unique Gulf War Syndrome and with progress of time

Although this is a self referral programme it is likely that the most unwell patients attended here leading some to believe this programme is unrepresentative of Gulf veterans health issues Nevertheless this large representation of those who did deploy allows certain conclusions to be drawn from this observational study particularly if they were the most unwell We believe our analysis will show that no unusual diseases or unusual pattern of diseases have emerged amongst Gulf veterans more than a decade after the conflict

METHODS

We have conducted interviews examinations and investigations as previously described Here we describe diagnoses that were evident at the time veterans came through the programme according to ICD 10 or diagnoses confirmed later as a result of GVMAP attendance We emphasise this paper is not concerned with diagnoses following GVMAP attendance unless the symptoms were present at the time of assessment Furthermore GVMAP is not a treatment centre and was never intended to offer veterans regular follow up visits

We have used the same definitions regarding health status as outlined in a previous paper The categories used are well completely well with symptoms well with incidental diagnoses and unwell We have previously defined what we mean by an formal psychiatric diagnosis (NFPD) We have not included secondary diagnoses in this analysis ie where secondary diagnoses are the result of a primary diagnosis We have included all other diagnoses.

Diagnoses are classified as Gulf related (or linked to Gulf deployment) where solely or partly due to Gulf Service A veteran with Gulf related asthma would be one who had not previously had asthma who had no family history of asthma or atopy and whose condition developed *de novo* during Gulf service or within 6 months of leaving the Gulf This accords with the occupational related asthma definitions proposed by Bronks 1998 Likewise a skin disorder would be classified as Gulf related according to similar criteria Conditions following trauma in the Gulf (either organic or psychiatric) would have a clearly defined incident occurring whilst serving in the Gulf Also if a condition clearly occurred immediately after taking a medical countermeasure eg NAP (pyridostigmine bromide) or following acquisition of an infection (eg amoebiasis strongyloides giardiasis) in the Gulf this would be classified as Gulf related

RESULTS

A total of 3 233 Gulf veterans have been analysed with respect to their diagnoses at the time they attended GVMAP Sociodemographic data are shown in Table 1 The mean age of the veteran group was 34 Table 2 shows the overall health status of these Gulf veterans 75% were well and 25% unwell Of the 25% unwell 83% of illness (665 cases) was accounted for by psychiatric disorder Table 3 shows the main diagnostic findings by ICD 10 categories for this cohort The most frequently diagnosed diseases were of a psychiatric nature Further the 735 veterans with diagnosed mental and behavioural disorders there were 296 who had NFPD Thus about one third of veterans attending GVMAP had a psychiatric disorder whether formally diagnosed or assumed (NFPD) Post traumatic stress disorder was the most common diagnosis the majority were related to Gulf service (Table 4)

The most frequently seen organic diseases were of the musculoskeletal system (Table 5) of which were Gulf related including one with Reiter's syndrome Many of these disorders are clearly Service related eg osteoarthritis mechanical low back pain and chondromalacia patellae but only very few are specifically related to Gulf service

Of Gulf related organic diseases most were of a respiratory nature (Fig 1) of which asthma was

most common There were also 17 cases of tinnitus and 14 with rhinitis of whom 2 were Gulf related Skin disorders are shown in Table and only a small number were Gulf service related

The incidence of disorders of the central nervous system are shown in Table 7 The most common diagnosis was migraine none of which were Gulf related In addition we have seen the following cases carpal tunnel syndrome (14) post-viral fatigue syndrome (10) tension headaches (7) general or localised neuropathy (5) sleep apnoea (6) degenerative disorder (5) benign essential tremor (5) Bells palsy (4) neuralgia paraesthetica (4) Charcot Marie Tooth disease (2) choreoathetosis (1) meningoencephalitis (1) motor neurone disease (1) myoneural disorder (1) myotonic dystrophy (1) parkinsonism (1) Parkinson s disease (1) and restless leg syndrome (1) Of all nervous system disorders diagnosed there was just 1 assessed as being Gulf related – a case of post traumatic epilepsy

Digestive system disorders were found in 154 veterans There were 34 cases of irritable bowel syndrome (IBS) without concomitant psychiatric disorder almost half were Gulf related Cholelithiasis was found in 11 veterans one case was extant Of those cases found at GVMAP 8 veterans were asymptomatic and 2 symptomatic There were 6 cases of Crohn s disease all but one occurred in males and one had a family history

Table 8 indicates the frequency of diseases of the circulatory system The mean age of veterans with a circulatory disorder was 39 higher than the overall veteran group as would be expected The mean age of those with hypertension was 42 years and those with ischaemic heart disease 46 The circulatory disorders were found to be Gulf related

The most frequent diseases of the genitourinary system are shown in Table 9 The most common being nephrolithiasis In addition we have seen the following cases bladder dysfunction (9) prostatitis (6) orchidynia (5) peyronie s disease (5) gynaecological problems (4) balanitis (3) urinary tract infection problems (3) epididymitis (3) obstructive renal tract disease (2) analgesic nephropathy (1) benign microscopic haematuria (1) multiple renal cysts (1) pelvic inflammatory disease (1) reflux nephropathy (1) and urethral stricture (1) Of all the genitourinary disorders only 2 cases of bladder dysfunction were considered to be Gulf related

Table 10 shows the incidence of malignant disease and benign tumours seen in this cohort Two per cent of veterans seen, had a neoplasm of a malignant nature and 1% had benign neoplasms none related specifically to service in the Gulf Malignancies of the haem/lymph system and genitourinary system were most common Amongst benign skin tumours lipomata were the most common

Hypothyroidism was the most common endocrine disorder found in 22 veterans Seven cases of hypothyroidism were discovered as a result of attendance here of which 4 were in asymptomatic veterans The next most frequent endocrine disorder was diabetes mellitus Type I (18 cases) then Type II (13 cases) Diabetes mellitus cases were extant at the time of attendance with the exception of 2 found at GVMAP No endocrine disorder could be related to service in the Gulf Incidentally we found 10 cases of Gilbert s syndrome

The most common infectious disorders seen were skin fungal infections (14) which included tinea cruris tinea versicolor pityriasis versicolor and athletes foot Following this there were cases of the following gastroenteritis (6) including amoebiasis (2) giardiasis (1) strongyloidosis (1) spirochaetosis (1) cryptosporidiosis (1) 4 of which were Gulf related candidiasis (4) herpes (3) Lyme disease (3) CMV infection (2) genital warts (2) brucellosis (1) meningitis (1) and Q fever (1) Both brucellosis and Q fever were Gulf related

Various diagnoses have been made in the injury poisoning and consequences of external causes The diagnoses are mainly war injuries and accident related injuries some of which occurred in the Gulf There are 5 cases of angioneurotic oedema but non Gulf related There was one case of post vaccination granuloma and one of hypersensitivity reaction both Gulf related

The most common ear disorder was that of deafness followed by Meniere s disease and tinnitus

As for blood disorders none were found to be Gulf related We found 3 cases of common variable immunodeficiency 2 of which were symptomatic There were 9 cases of sarcoidosis 4 anaemias and 3 with thrombocytopenia

Only 2 eye disorders were considered to be Gulf related one of conjunctivitis another of episcleritis

Hyperhidrosis was the main diagnosis made in the chapter of symptoms signs and abnormal clinical laboratory findings not elsewhere classified Of the 5 diagnosed with hyperhidrosis one was considered Gulf related There was 1 case of memory loss

DISCUSSION

We have analysed all diagnostic data on veterans who attended in this department prior to 1 June 2004 It is emphasised that our data cannot address the issue of prevalence amongst the general population We have attempted to clarify whether any diagnoses could be related to service in the Gulf and to any exposures during that time We were looking for relationships between antibiological warfare vaccinations (anthrax, pertussis plague) depleted uranium organophosphates NAPS chemical warfare agents insecticides/pesticides desert diseases smoke and fumes from burning oil wells and psychological stressors[4]

With respect to medical countermeasures used we have identified 6 cases of IBS and 2 cases of detrusor muscle instability the onset of which coincided with taking NAPS A further case of chronic hyperhidrosis also appeared related to NAPS There were 8 cases of IBS associated with Gulf service but with no specific aetiology There were 2 cases whose conditions were attributable to the use of antibiological warfare vaccinations (*vide supra*)

As for Gulf related environmental issues we found a significant number 39 (1%) whose asthma was Gulf related out of a total of 212 (7%) presenting with this condition There were also 2 cases of Gulf related rhinitis The precise aetiology we cannot be sure about although most were exposed to smoke and fumes arising from burning oil wells and general desert conditions They fitted with the criteria proposed by Brooks[5] as being due to exposures whilst serving in the Gulf We also found one case of conjunctivitis and one of episcleritis which were probably due to oil well smoke and fumes

Gulf related skin conditions (alopecia acne dermatitis and psoriasis) occurred in 9 veterans Most of these conditions could not be assigned to a specific exposure but there was one case of dermatitis that was caused by an insect bite and another that was from exposure to diesel oil

It has already been established in controlled studies that there is no increased mortality due to disease amongst Gulf War veterans Repeat follow up data from the Defence Analytics Services Agency[6] has not shown any increased mortality or indeed any increased cancer formation amongst Gulf War veterans Our own data on malignancies does not show the evolution of any unusual pattern of sarcoma amongst the veterans we see here which accords with the controlled DASA data[6]

Most veterans attending GVMAP came with extant organic diagnoses As a result of investigations from their assessment we found with hypernephromas 10 with Gilbert syndrome, 7 with thyroid disease and 2 with diabetes mellitus

The mean age for veterans with circulatory disorders was higher than the overall veteran group as would be expected None related to Gulf service deployment

The most commonly seen disorders amongst veterans here were of a psychiatric nature confirming our previous findings The most frequently seen condition was PTSD 12% with or without co morbidity and 93% were Gulf service related This accords with findings in America and Australia

Amongst the genitourinary conditions nephrolithiasis was the most commonly found It is not possible to relate development of stones to such a short duration of service in the Gulf

Many veterans came here with known diagnoses but wanted reassurance that their problems were not related to service in the Gulf Having been given such reassurances these veterans went away satisfied as per data gathered from anonymised patient satisfaction questionnaire Of the few who had definite Gulf

lated disorders they were relieved to hear the
ign of their complaint

Although 8 cases of hypernephroma were
en 3 *de novo* it is worth noting that in the
neral population the incidence of
ypernephroma has increased by 43% since
77 (Vogelzang)[7] We have not noted the
velopment of any unusual cancers amongst
terans which supports evidence elsewhere

We have not seen any evidence to suggest an
creased incidence of neurological disorders
mongst veterans Some studies have suggested
urological disorders and parasympathetic
utonomic system dysfunction as a result of Gulf
rvice [illegible] but such studies have been poorly
ntrolled and numbers recruited extremely
all For example we did not find any
idence of increased gall bladder disease as
ggested by Haley Others have found a
creased prevalence of peripheral nerve
thology by electrodiagnostic testing in Gulf
ar veterans supporting the research of Shaneé
al[illegible] This was further reinforced by other
udies Our data should prove encouraging
veterans who hitherto have had concerns that
ar neurological disease problems might be
lated in service in the Gulf We have only
en one case of epilepsy which was caused
llowing an injury that took place in the Gulf

There have been media claims of disorders of
immune system resulting in increased
ections as a result of service in the Gulf
rticularly from receiving antibiological
ulfare vaccinations As per our previous
alysis of results of investigations[5] carried out
all veterans who have attended GVMAP we
ve not found any evidence to support this
ewhere no evidence of abnormal
munological responses in Gulf War veterans
s been found Another study[illegible] suggested
re might be altered immune cellular
tivation in Gulf veterans Their results were
tainable given they were 9 years after service in
Gulf The authors were not certain that their
ults were of any clinical significance or could
used as a diagnostic measure

ONCLUSION

have found conclusive evidence as a result of
depth consultations of a relationship between
lf service deployment and the development of
vehicular (424) respiratory (41) and
dermatological disorders (9 Also we have
found 2 eye conditions and 5 cases of IBS linked
to Gulf service

With respect to medical countermeasures we
found 6 cases of IBS 2 cases of detrusor muscle
instability and 1 case of chronic hyperhidrosis
associated with taking NAPS tablets There were
2 cases with problems linked to antibiological
warfare vaccinations

There were 6 cases of infectious diseases
related in Gulf deployment There were 7
veterans with musculoskeletal problems (5 with
osteoarthritis 1 with mechanical low back pain
and one with Reiter's syndrome) whose origin
could be traced to Gulf deployment

There is nothing contained in this analysis to
support the media publicised suggestion of a
specific Gulf War Syndrome or any unique Gulf
service related illness All illnesses are
accounted for by well established ICD 10
classifications We have not found any medically
unexplained conditions There is no rationale as
proposed by the Lloyd report for attaching a
label of Gulf War Syndrome to an ill veteran

CONFLICT OF INTEREST STATEMENT

We declare that we have no conflict of interest

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necessarily represent those of the Ministry of
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TABLE 1
Sociodemographic data for 3 233 gulf veterans

Gender		
Male	3 105	(96)
Female	128	(4)
Service in Gulf		
Army	2514	(77)
Royal Navy	297	(9)
Royal Air Force	452	(14)
Age at MAP		
Under 25	102	(3)
25 to 34	1788	(55)
35 to 44	1046	(32)
45 and over	297	(9)
Serving status on referral to MAP		
Serving	1439	(45)
Discharged	794	(55)

Values are numbers (percentages) of veterans

TABLE 2
Diagnosis based findings in 3 233 Gulf veterans

Well	**2439**	**(75)**
Well completely (asymptomatic)	325	(10)
Well with symptoms but no disease	858	(27)
Well with incidental diagnoses	1252	(39)
Only psychiatric conditions	216	(7)
Only organic conditions	930	(29)
Both	106	(3)
Unwell	**797**	**(25)**
Only psychiatric conditions	462	(14)
Only organic conditions	132	(4)
Both	203	(6)

Values are numbers (percentages) of veterans
A classification of NFPD is considered as a psychiatric condition

ABLE 3
agnoses by ICD 10 categories for 3 233 Gulf veterans

agnoses[1] (CD-10 Categories)		
ental and behavioural disorders (F00 F99)	735	[illegible]
seases of the musculoskeletal system and connective tissue (M00 M99)	282	[illegible]
seases of the respiratory system (J00-J99)	265	8
seases of the skin and subcutaneous tissue (L00-L99)	221	7
seases of the nervous system (G00 G99)	157	5
seases of the digestive system (K00-K93)	154	5
seases of the circulatory system (I00-I99)	127	14
seases of the genitourinary system (N00-N99)	97	3
eoplasms (C00 D48)	94	3
docrine, nutritional and metabolic diseases (E00-E90)[2]	82	3
rtain infectious and parasitic diseases (A00-B99)	37	1
ury, poisoning and certain other consequences ternal causes (S00-T98)	36	[illegible]
seases of the ear and mastoid process (H60-H95)	26	[illegible]
seases of the blood and blood-forming organs and rtain disorders involving the immune mechanism (D50-D89)	22	[illegible]
seases of the eye and adnexa (H00-H59)	14	[illegible]
mptoms, signs and abnormal clinical and laboratory dings, not elsewhere classified (R00-R99)	6	0

ues are numbers (percentages) of veterans
veteran is counted only once in any single Diagnostic Category but can counted in multiple categories
agnosis of obesity has been excluded from the Endocrine, Nutritional and etabolic Diseases chapter

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ABLE 4
ost frequent diseases of the mental and behavioural sorders (F00-F99) in 3,233 Gulf veterans

seasa			Gulf related	
Post traumatic stress disorder	**397**	**(12)**	**368**	**(11)**
without co-morbidity	241			
with co-morbidity	156			
Depression	76			
Substance abuse	54			
Both	26			
pression	**143**	**(4)**	**19**	**(1)**
bstance abuse	**74**	**(2)**	**16**	**(0)**
djustment disorder	**43**	**(1)**	**13**	**(0)**
xiety disorder	**41**	**(1)**	**19**	**(1)**

ues are numbers (percentages) of patients

TABLE 5
Most frequent diseases of the musculoskeletal system and connective tissue (M00 M99) in 3 233 Gulf veterans

Disease			Gulf related	
O/A	117	(4)	5	(0)
Mechanical low back pain	32	(1)	1	(0)
Arthropathy/Polyarthropathy	26	(1)	–	
Polyarthropathy, seronegative	23			
Polyarthropathy, seropositive	1			
Arthropathy, reactive (arthritis)	2			
Chondromalacia patellae	23	(1)	–	

Values are numbers (percentages) of patients

TABLE 6
Most frequent diseases of the skin and subcutaneous tissue (L00 L99) in 3 233 Gulf veterans

Disease			Gulf related	
Dermatitis	61	(3)	6	(0)
Eczema	55			
Dermatitis	25			
Skin allergy	1			
Psoriasis	47	(1)	2	(0)
Urticaria/Erythema	25	(1)	1	
Acne	23	(1)	2	(0)
Skin infections	18	(1)	1	

Values are numbers (percentages) of patients

ABLE 7
lost frequent diseases of the nervous system
300-G99) in 3 233 Gulf veterans

Isease			Gulf related	
ligraine	43	(1)		
pilepsy	26	(1)	1	(0)
Idiopathic	22			
Post traumatic	6			
ultipla sclerosis	19	(1)		

alues are numbers (percentages) of patients

ABLE 8
ost frequent diseases of the circulatory
ystem (I00-I59) in 3 233 Gulf veterans

Isease			Gulf related
ypertension	48	(1)	
chaemic heart disease	29	(1)	
rhythmias/Conduction defects	17	(1(	

alues are numbers (percentages) of patients

ABLE 9
ost frequent diseases of the genitourinary
ystem (N00-N99) in 3 233 Gulf veterans

Isease			Gulf related
ephrolithiasis	22	(1)	
igospermia/Infertility	16	(0)	
lomerulonephritis	15	(0(	

alues are numbers (percentages) of patients

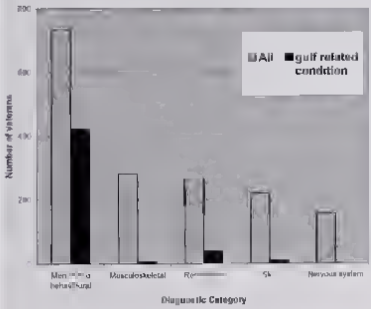
TABLE 10
Neoplasms (C00 D48) in 3 233 Gulf veterans

Disease			Gulf related
Malignant		**61**	**(2)** -
Haem/Lymph	Hodgkin's disease	5	
	Non Hodgkin's lymphoma	3	
	Burkitt's lymphoma	1	
	Myeloma	1	
	Leukaemia	4	
GU	Cancer of bladder	3	
	Renal carcinoma	6	
	Renal pelvis transitional cell carcinoma	1	
Neuro	Glioma	2	
	Acoustic neuroma	1	
	Intramedullary spinal cord tumour (malignant melanoma)	1	
	Oligodendroglioma	1	
	Glioblastoma Multiforme	1	
Skin	Melanoma	4	
	Liposarcoma	1	
	Ulcerated (HCC)	1	
GIT	Adenocarcinoma of sigmoid colon with metastasis	1	
	Anal marginal carcinoma	1	
	Cancer of pancreas	1	
	Carcinoid tumour	1	
	Melaena	1	
Testes	Anaplastic seminoma of testicle with metastases	1	
	Seminoma	1	
	Bilateral testicular tumours	1	
	Right testicular cancer	1	
	Testicular teratoma	1	
Respiratory	Lung cancer	3	
	Carcinoid	1	
Eye	Melanoma	1	
	Adenoid cystic carcinoma	1	
	Adenocarcinoma	1	
Bone	Sarcoma	2	
ENT Sinuses	Carcinoma	2	
Other	Retroperitoneal teratoma	1	

ABLE 10
leoplasms (C00-D48) in 3,233 Gulf veterans

Disease			Gulf related
enign		**36 (1)**	**-**
Skin	Lipomas	22	
	Heloicytoma	1	
	Melanocytic naev intradermal	1	
Neuro	Meningioma	2	
	Acoustic neuroma	1	
	Neurofibromatosis	1	
	Pituitary adenoma	1	
Bowel	Colon polyps	2	
Haem/Lymph	Thrombocythaemia	2	
Bone	Echondroma	1	
Endo	Pituitary tumour	1	
GIT	Gastric polyps	1	

G 1
ain Diagnostic Categories for 3,233 Gulf veterans



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Cardiological disease in the Armed Forces: A clear and present danger

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ABSTRACT

Despite a younger cohort of individuals than typically found in other large organisations the Armed Forces are not free from cardiac disease. Indeed some conditions are more frequently found and the high risk occupations of individuals within the Armed Forces makes it imperative that all cardiac conditions are identified rapidly and correctly. By illustrating actual cases we highlight the need for service personnel to have rapid access to expert cardiological expertise from individuals with an in depth occupational knowledge of the Armed Forces 365 days per year.

ABBREVIATIONS AND ACRONYMS

ECG	= electrocardiogram
SVT	= supraventricular tachycardia
AVNRT	= atrioventricular re entry tachycardias
WPW	= Wolf Parkinson White syndrome
ARVD	= arrhythmogenic right ventricular dysplasia
MRI	= magnetic resonance imaging
ACM	= alcoholic cardiomyopathy
IDCM	= idiopathic dilated cardiomyopathy
HCM	= hypertrophic cardiomyopathy
IHD	= ischaemic heart disease
CPO	= Chief Petty Officer

INTRODUCTION

Although the Armed Forces predominantly represent a young cohort of potential patients one cannot assume that they are therefore free from cardiac disease. Certain cardiac conditions most frequently present in younger people but more importantly the high risk occupations of individuals within the Armed Forces makes it imperative that cardiac conditions are identified rapidly and correctly. Additionally specific specialist knowledge of the structure demands and rigours of the Armed Forces is essential allowing the military cardiologist to offer the best occupational health advice to the benefit individuals concerned their commanders and potential recruits. Outlined in this review is a short summary of the pathologies that are prevalent within our services illustrated by examples from our personal experience. This will highlight not only the presence of cardiac disease in the Armed Forces but the reliance on specialised equipment and expertise in both diagnosis and subsequent management.

ARRHYTHMIAS

Cardiac arrhythmias may be classified as benign or malignant depending on their effect on the haemodynamic compromise they cause. Benign arrhythmias may be inherently stable or may degenerate into a more malignant rhythm. Benign arrhythmias are most common and may often present with an awareness of missed beats or palpitations. In younger patients the sensation of missed beats is invariably an awareness of ventricular ectopics or a tachycardia. Standard 12 lead ECGs are rarely of any use unless taken while the patient is symptomatic and a 24 h ambulatory ECG (or Holter monitor) is normally required to help clarify the underlying rhythm disturbance. Simple ventricular or atrial ectopics require little more than reassurance but both bradycardias and tachycardias normally require a little more attention.

The commonest cause of bradycardia in the service population is simple sinus bradycardia related to the normal physiological response to regular sustained exercise. A more extreme example of this occurs with vasovagal syncope which in severe cases can present with sudden

ed prolonged episodes [illegible] onsciousness. The condition can be recipitated with tilt table testing which re[illegible] e severe bradycardia contributing to the lo[illegible] nsciousness. The rating repatriated from the alklands (with suspected epilepsy) developed e bradycardia shown in figure 1A [illegible] sting. Her symptoms were significantly proved with the insertion of a specialised acemaker. Such devices are symptomatically ecessary and can profoundly improve the atient's quality of life however their specialised llow up would normally restrict the individual permanent medical downgrading.

Both first degree heart block and Wenkebach econd degree heart block (Mobitz type one) e normal variants in young and athletic people d if asymptomatic most personnel can be assured. This however is not true in [illegible] d requires further investigation. Mobitz type 2 d complete heart block however are thological and require further intervention d often pacemaker insertion.

Of the tachycardias paroxysmal atrial brillation is frequently seen in Service patients ten because of its association with excess cohol (the so called holiday heart) or caffeine. ife style changes are usually effective in olation as prophylaxis and if effective the tients should be able to continue in full rvice however continued excessive alcohol nsumption may lead to persistent fibrillation quiring consideration of anticoagulation and ectrical or chemical cardioversion.

Atrial flutter with rapid ventricular conduction d SVTs (atrioventricular re-entry chycardias (AVNRT) and atrioventricular chycardias (AVRT)) can be very debilitating d should be treated rapidly. A condition that n cause both atrial fibrillation and AVNRT nd if untreated carries a risk of sudden cardiac ath) is Wolf Parkinson White syndrome VPW). This case was picked up in a young ting from Torpoint and was identified up by the aracteristic QRS morphology (Figure 1B). ore recently this condition has been cured with ectrophysiological ablation of the abnormal nducting pathway and now means that many dividuals with flutter or AVNRT can be fectively cured and returned to service at full ness.

[illegible] ventricular padding [illegible] 1C illustrates such [illegible] a member of the SAS [illegible] the condition [illegible] ventricular dysplasia [illegible] inherited pre[illegible] are replaced by [illegible] the MRI). The [illegible] cardiac death in [illegible] people. This patient was medically [illegible] and [illegible] implantable [illegible] which will improve his long term prognosis.

CARDIOMYOPATHIES

The two main cardiomyopathies are classified by the appearance of the myocardium [illegible] into dilated and hypertrophic form. Both are found in Service personnel.

Whilst cardiac ischaemia is by far the commonest aetiology of the dilated form in the general population [illegible] cardiomyopathy (ACM) and idiopathic dilated cardiomyopathy (IDCM) should be considered high on the list of the Service cardiologist. Both conditions are likely to necessitate permanent medical downgrading and life long medical [illegible] and complete abstinence from alcohol is required for any hope of improvement in the ACM group. IDCM is a [illegible] diagnosis made by exclusion and is commonly believed to be precipitated by viral illness. This precipitates a chain of events that may in its most severe form result in [illegible] heart transplantation is not performed. This is illustrated by the case of a young soldier who had become increasingly short of breath on minimal exertion. He was subsequently found to have IDCM on echocardiography (figure 2) and may subsequently require heart transplantation.

Hypertrophic cardiomyopathy (HCM) is an inherited genetic condition that not uncommonly presents with impaired exercise tolerance and cardiac arrhythmias. It was just such a history that a young cadet from Dartmouth Naval College gave and the early clue to her diagnosis was her abnormal resting ECG shown in figure 1D. HCM with left ventricular outflow tract obstruction is also an important cause of sudden cardiac death in the young and most significantly

for the Armed Forces is the fear that this can be exacerbated by both exercise and sudden cessation of exercise[8]. It is this fact that has prompted many sporting associations to screen all their athletes with at least an ECG and has previously prompted us to suggest that an initial recruit ECG should be mandatory. It should also be noted that such individuals found to have repolarisation abnormalities should not be passed as having an athletic heart unless apical HCM has been excluded either with contrast echocardiography or cardiac MRI[9]. Conventional echocardiography can often miss marked apical changes as illustrated in figure 3.

VALVULAR AND CONGENITAL HEART DISEASE

Congenital valvular disease and septal defects are relatively uncommon in the Services however recruits with corrected congenital abnormalities do apply to the Services and need to be appropriately assessed prior to trade specific recruitment. Congenital bicuspid rather than tricuspid aortic valve is not uncommon and may be asymptomatic and clinically undetectable at recruitment but subsequently present as chronic valvular regurgitation or early stenosis. Mitral Valve prolapse remains prevalent in the population and should be reviewed for evidence of significant regurgitation.

Individuals with valvular heart disease can remain in full service as long as they show no ventricular signs of deterioration but should remain under annual review (including echocardiography) and be aware of the need for prophylactic antibiotics during dental and other 'dirty' surgery to reduce the risk of endocarditis. With the introduction of the new Typhoon Euro fighter aircraft and the increased G forces put on the aircrew echocardiography may need to play a greater role in the medical selection of fast jet aircrew.

ISCHAEMIC HEART DISEASE

The Armed Forces are by no means free from cardiac disease with a mainly male population significant percentage of smokers and often eating high fat diets. Any individual therefore describing symptoms consistent with angina should have an exercise tolerance test or a nuclear perfusion scan. If these non invasive tests are positive then coronary angiography should be performed. Advice on cholesterol lowering diet alcohol and smoking should also be given.

Access to interventional cardiology can also facilitate the return to health of Service personnel with IHD. The development of coronary angioplasty and the use of drug eluting stents have significantly reduced re stenosis rates resulting in individuals who previously would have been medically discharged or permanently downgraded now returning to full service. Figure 4 illustrates the benefit of angioplasty and stent insertion of a Chief Petty Officer (CPO) who was threatening to have an inferior myocardial infarction.

The economic impact of this is clear especially with the aircrew cadre as these advances potentially save millions invested in the training. Such individuals with lesions like those illustrated in figure 5 and who have not suffered no infarction can be demonstrated to have completely normal cardiac perfusion and function after angioplasty and returned to active service although with restriction to flying duties.

CONCLUSION

This paper and the highlighted cases it contains illustrate the fact that cardiac disease exists in all Armed Forces and its diversity covers all aspects of the specialty. In most cases abnormal ECGs within the Service population represent benign variations of normal however the morbidity and mortality of the conditions that must be excluded is significant if not investigated diagnosed and managed correctly. The occupational significance of cardiac disease within the services cannot be overstated from both the health of the individuals concerned and the potential threat to life of others should the personnel suddenly become incapacitated.

The primary purpose of the Medical Directorate General is to 'Conserve manpower by ensuring that the Royal Navy Army and Royal Air Force has a medical capability for war which meets the standards set by the Surgeon General and adequate to maintain the operational effectiveness availability endurance and health of Service personnel in peace crisis major crisis and war.'

Within this specialty the only way of achieving this is to offer Service personnel rapid access to expert cardiological expertise in conjunction with an in depth occupational

nowledge of the Armed Forces 365 days per ar These cases highlight the fact that the rvice physician can no longer rely simply on e stethoscope to make these diagnoses but also ust rely on the use of specialised non invasive id invasive equipment found only in larger condary and tertiary care centres that have a ecialist cardiology service

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4 [illegible] gh [illegible] 1 [illegible]

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7 [illegible] 1999 [illegible]

8 M [illegible] D [illegible] in patients with [illegible] graphy *H [illegible]* 2004 90:645-649

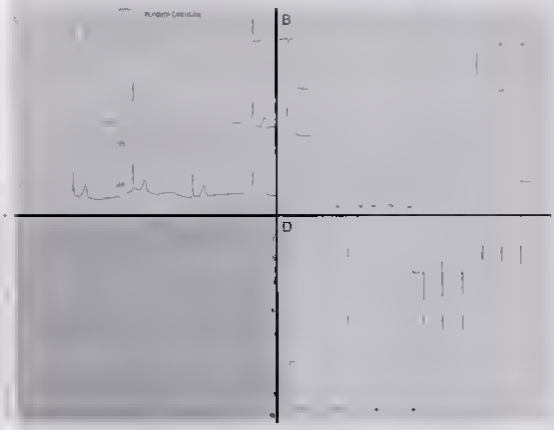
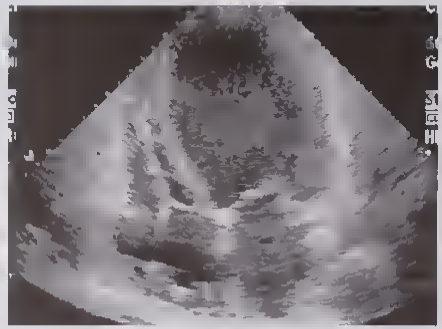


Figure 1

12 lead ECGS showing marked bradycardia precipitated by the inhalable nitrate (A) Characteristic delta wave associated with left ventricular preexcitation in the Wolf Parkinson White Syndrome (B) Ventricular tachycardia (C) and marked repolarisation abnormalities found with HCM (D)



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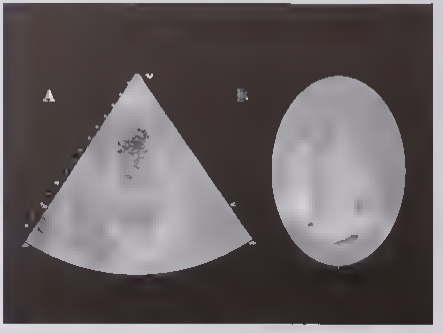
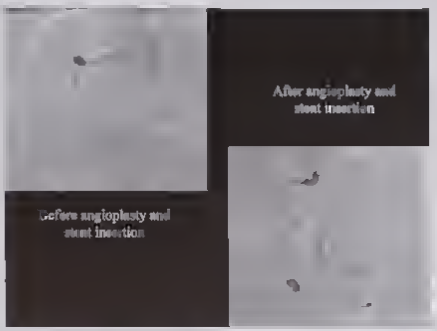
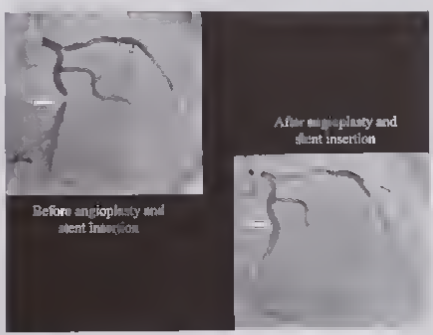


[illegible] HCM [illegible] indicate [illegible]



[illegible]

Coronary [illegible] CPO before and after angioplasty and [illegible] insertion [illegible] which excluded and the filling the [illegible] healthy vessel



[illegible]

Coronary [illegible] illustrating severe coronary [illegible] and stenosis in a vessel

Book Reviews

Demonstrating Your Competence 5
Substance Abuse, Palliative Care, Musculoskeletal Conditions, Prescribing Practice
Gill Wakley, Ruth Chambers and Clare Gerada
Radcliffe Publishing, Oxford, 2005, £24.95, pp 219, soft cover
ISBN 1 85775 614 2

This is the fifth (and final?) book in a series designed to help us demonstrate our competence to the standard expected by the General Medical Council. The specific aim is to help us to collect evidence to show that we should continue to hold a license to practice as doctors from 2005 onwards. That date has now been superseded by the GMC's Postponement of Licensing and Revalidation on the 4th of March 2005 resulting from the review announced in December 2004 in light of issues raised by Dame Janet Smith in the fifth report of the Shipman Inquiry. We will however have to provide evidence for revalidation at some time in the near future so why not get ahead of the game!

The authors are working GPs and come to the subject with an understanding that the work needed for revalidation/appraisal has to be fitted alongside busy work and home lives. The book is presented in an easy to read format which encourages middle aged eyes to read and absorb the advice. The main tenant of the book is to use the Stages of Evidence Cycle to look collect data to demonstrate your learning, competence, performance and standards of service delivery. This in turn can be used to inform your PDP and provide evidence for your next appraisal and revalidation.

The book has well worked examples of how to achieve its objectives (as in the Ronseal adverts – it does what it says on the tin). I enjoyed reading it, it informed me and made me feel that I could, with not too much extra effort, provide excellent evidence of competencies in the fields it covers. I was impressed enough that I will put my money where my mouth is, an actually purchase others in the series.

Surgeon Commander Donald Richard Batham
Royal Navy
PMO HMS Warrior

FMQs for the MRCGP Paper 2 with answers discussed First edition
Hayley Dawson and Anna Trigell, Radcliffe Publishing Ltd 2005, ISBN 1 85775 625 8, 20[illegible] pages

I wish this book had been available when I sa[illegible] my exams last year!

When I was given the book to review my first reaction was not another book giving yet another method to sail through the MRCGP.

The first part of the book reiterates the things often forgotten such as arriving in good time and reading the questions carefully. The authors then go on to explain how the questions are devised and the sort of questions that are likely to appear.

I put myself on the spot (you know how you study for an exam and then immediately forget all you have learnt! Not really!) and decided to actually test myself on random papers.

The breadth of the questions and the excellent discussions that followed each answer pleasantly surprised me.

I suspect that my revising would have been enriched if this book were available to me. I strongly recommend this book as an aid to passing the MRCGP. Perhaps it could be included in the books given to GPVTs if not as an addition in place of the Fastest book?

Surgeon Lieutenant Commander F Darwood
Royal Navy
DPMO HMS Sultan

kills for Communicating with Patients
econd Edition.
onathan Silverman Suzanne Kurtz and Juliet
raper Oxford Radcliffe Publishing Ltd
005 pp262 ISBN 1 85775 640 1

his publication is the companion text to the
uthors weightier volume "Teaching and
earning Communication Skills and is aimed at
e practitioner rather than the medical educator
s may be inferred from the titles) This is the
econd edition of this well established textbook
t at has sought to bring more current evidence
to the realm and dark art of communication
ills

I can hear the reader thinking that this is purely
r the General Practitioner or GP Registrar but
t me put you straight at the outset it has much
o offer all medical practitioners and health
ofessionals who may find themselves in
ntact with patients With an increasing focus
within medical schools on communication skills
is area of interest is becoming more widely
searched and has greater relevance within the
odern consumer led culture of current medical
actise This book has been updated with
rrent research and a wider remit taken to make
more accessible and usable by every species of
actitioner

The book itself may appear daunting thick to
yone used to the less hefty tomes that deal
th communication skills but this reflects the
tensive and opposite references that are
luded and discussed within the text The
thors set out their style very early in Chapter I
th a clear exposition of what they aim to
hieve before laying out a structure for the
edical interview with 71 process skills
lgary Cambridge Guides Communication
ocess Skills) This may make one question
hy so many skills are involved and they
mptly defend their position with coherent
uments great rigour and recourse to extant
search All these process skills are discussed
greater depth throughout the volume and their
ace within the armamentarium that the
actitioner may utilise is considered and
plained.

After the first and further introse chapter the
style settles into a much more ordered discussion
on the stages of the consultation and how best to
utilise the skills that have been iterated
previously in Chapter I This is done in a clear
eloquent and engaging style with clear reference
to previously published texts and extant research
so that the concept can be easily placed within
the reader s own frame of reference from
personal reading This enables the assimilation
of and reflection upon the ideas mooted and
methods suggested for implementation

The final chapter takes a closer look at specific
problem areas within the core communication
skills covering such topics as the breaking of bad
news cultural issues age issues and the use of the
telephone These are all covered in the well
established easily accessible style championed
throughout the book that allows the reader to
reflect and carefully consider the implications of
the concepts discussed

The one aspect of this book that could cause
one to pause for thought prior to picking it up is
the apparent academic bent of the tome whilst it
may appear intimidating the discussion and
exposition of the research is put neatly into
context and the relevance clearly shown
Experience of other texts in this area would be of
benefit to the reader so that the majority of
quotes and references can be placed in context

In summary this is an eminently approachable
book that provides comprehensive and
exhaustive information around the subject of
communication skills It would be ideally suited
as a second text to expand and reflect upon skills
learnt from other lighter volumes To those less
easily intimidated by such overt academic
overtones then this will be an excellent and
thorough text to enhance and develop skills The
language is clear the examples copious and the
research assiduous making the text both
authoritative and accessible I would not hesitate
to recommend this to anyone who has an interest
in communicating effectively with his or her
patients – and who doesn't?

Surgeon Commander Duncan G S Blair
Royal Navy

J Royal Naval Medical Service 2005; 91.2 120-123

Letters to Editor

From Surgeon Captain DS Wright OBE, RN [illegible]

The Editor
Journal of the Royal Naval Medical Service
Institute of Naval Medicine [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

It was not all hard [illegible] sounded, and tools [illegible] breakfast then be[illegible] sausage various [illegible] As the General had [illegible] French champagne [illegible] excellent work.

The object of all this [illegible] (which would cost millio[illegible] something about a place of [illegible] of 16th century Roman bas[illegible] every Sunday outside Trebol[illegible] the town which the British b[illegible] which was first called Georg[illegible] then [illegible] very welcome and on their first visit have an [illegible] Menorquin with some Castilian, but you can [illegible] present speak some English – it may be Eng[illegible] are encouraged after breakfast, but there is no [illegible] subscription to cut out bureaucracy paperwork [illegible]

There is a great deal of information available on the we[illegible] www.rslahospitalmenorca.org This includes history and p[illegible] all in Spanish. Photographs are taken of each working p[illegible] the net within 24 hours you will find me and my wife th[illegible]

A French frigate is visiting Menorca in September and ha[illegible] working party to help with the good work. As the French [illegible] with the active hospital was so brief it is to be hoped that the Royal N[illegible] in these days of overstretch, can do rather better to help re[illegible] most interesting part of our history There is a lot of fun to be had [illegible] and I have been enjoying great runs ashore in Menorca for 40 year[illegible]

Yours sincerely

David Way

Commodore F Reed Royal N(rv)
Chairman and Editor
Journal of the Royal Naval Medical Service
Institute of Naval Medicine
Alverstoke
Gosport
Hants
PO12 2DL

Dear Commodore Reed

As a former Medical Technician (LACMT) and having enjoyed the privilege of working alongside Surgeon Commander FMJ Hiles OBE, now unfortunately deceased for a little in excess of 11 years at the Alcohol Treatment Unit, I read with considerable interest the article focussing upon Deliberate Self Harm in the *Journal of the Royal Naval Medical Service* (Volume 91 1 2005)

Whilst Steve Micklewright should be congratulated on highlighting this clinically challenging and definitionally elusive topic the term Deliberate Self Harm (DSH) has been widely criticised on a number of grounds in particular for its lack of specificity

A number of authors (Walsh & Rosen, 1988 Towl 1997) have argued the term DSH is far too over inclusive and serves to blur the distinctions between behaviours that may have distinct motivations and functions for the individual In addition the use of the word deliberate as a descriptor of self injurious behaviour is equally problematic

Pattison and Kahan (1983) postulated the concept of a DSH syndrome and in doing so adopted a markedly different definitional approach to that of Morgan (1979) They excluded all cases of drug and alcohol overdoses together with all cases where the DSH seemed to be of high lethality

I would challenge the statement that DSH is commonly termed attempted suicide Although self harmers could engender their own death by their behaviour in the vast majority of cases this does not occur Their behaviour is in fact counter intentional to suicide rather than suicidal Acts such as self mutilation and self poisoning, according to Babiker and Arnold, (1996) may be seen largely as anti thetical to suicide

Yours sincerely

Nicholas Murdoch MA PGCert(Scientific Research) BA(Hons) RGN RMN
Doctoral Student, Post Graduate School of Medicine, University of Southampton

Response to Mr Murdoch's letter dated 1 July 2005 by Stephen Micklewright

I am grateful to the Editor for the opportunity to respond to Mr Murdoch. I also thank him for his comments. In truth I suspect that there is very little disagreement between us regarding terminology. I do point out in my article that DSH is "not without problems as a classification. To have expanded much further on this would have detracted from the main purpose of the paper. Deliberate Self harm is very much a working term and is used in my article as such. It is the one adopted by the most comprehensive and long running study in the UK at Oxford (Hawton et al 1997). It is also commonly used by other authoritative sources e.g. NHS Centre for Reviews and Dissemination 1998. In addition it will be familiar to the target audience. I had no intention of advancing it as a totally satisfactory categorisation of the behaviours in question.

Where I would differ from Mr Murdoch is in his suggestion that there is a "DSH Syndrome" that is distinct from cases where DSH seemed to be of high lethality. This is in effect a return to the classification of self harm as attempted suicide (serious) or para suicide (not serious). In individual cases such a classification is often extremely difficult to make and has few if any practical implications in terms of management. On the other hand it has many disadvantages, not least the fostering of negative attitudes to certain client groups amongst health care staff. Whatever its disadvantages, DSH as a terminology does allow us to recognise that there is a continuum of behaviours being demonstrated, each of which requires assessment and management on an individual basis.

Stephen Micklewright

References-

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NHS Centre for Reviews and Dissemination, University of York (1998) Effective Health Care: Deliberate Self Harm. NHS Executive

Service News

First Sea Lord Visits INM & Royal Hospital Haslar

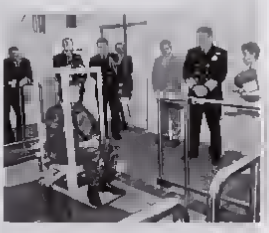
Lieutenant Lee Hazard Royal Navy
First Lieutenant INM

First Sea Lord Admiral Sir Alan West GCB, DSC ADC visit to the Institute of Naval Medicine & Royal Hospital Haslar – 10 June 2005

In July 1981 Admiral Sir Henry Leach the then First Sea Lord officially opened the new extension to the Institute of Naval Medicine and a decade later the institute was visited by Admiral Sir Julian Oswald First Sea Lord Keeping up the tradition of visiting every decade the First Sea Lord Admiral Sir Alan West returned to the Institute to review the scientific work and research that *continually improves the Royal Navy's operational capability by promoting good health and safety and maximising the effectiveness of personnel*

The link between the operational capability of the Royal Navy and the naval medic were secured in 1753 when Sir James Lind identified the treatment of scurvy by issuing lime juice to sailors thus assuring the name Limeys for the next century and a half and immortalising the Lime tree within the INM crest It was not until 1793 that the Admiralty gave a formal order for daily issue of lemon juice

The First Sea Lord met with MA(SM)s on the Nuclear Physics course and scientists at the Environmental Medicine Unit where sailors from the Firefighting Trials Unit, Horsea Island were undergoing arduous heat trials at 40 degrees centigrade and at 50% relative humidity wearing full Fearnought suits and the latest design concepts in cooling vests aimed to keeping Ship's firefighters cool when firefighting Other experiments included the Viking rebreather a life saving rebreathing bag attached to the combat assault troop life jacket an aid to saving Royal Marines lives in the event of the Viking BV206 amphibious vehicle sinking Also



in the route was the Helicopter Crash Rescue Team who with the latest equipment provide environmental clean up operations for crash sites

During the tour Service Doctors were given the opportunity to discuss the Institute's direct input into NATO's Submarine Escape & Rescue Assistance Team working group and the Diving & Hyperbaric medics whose 24/7 response has provided medical intervention to approximately 40 civilian and Service diving incidents a year along with over 400 telephone advice calls and continues to advise the SF and the tri Service on underwater medicine matters

Later in the day the First Sea Lord Admiral Sir Alan West, visited the Royal Hospital Haslar to unveil a plaque to the 15 000 sailors and soldiers who died between 1753 and 1826 and are buried in the grounds Among the thousands of bodies which lie in unmarked graves are those from the battles of Trafalgar Corunna and Waterloo sailors from ships and many of the 600 who died when the Royal George capsized Spithead in 1782 The men who died in the

ountry s service [illegible] packed in land to the outh west of the hospital where many were orned in just their hammocks The ceremony was attended by Brigadier David Homer of the Green Jackets whose men suffered great losses at Waterloo and Colonel Jeremy Heal Royal Marines from Fleet HQ Portsmouth whose Marines fought gallantly at Trafalgar The Surgeon General, Surgeon Vice Admiral Ian Jenkins and Surgeon Rear Admiral Mike Langhamson Roberts also attended with the Mayor of Gosport and other Military dignitaries

[illegible] the Medical Division [illegible] the Royal Naval [illegible] Branch Staff Association [illegible] Thursday [illegible] The Reception [illegible] HMS Raleigh [illegible] HMS Raleigh [illegible] HDC [illegible] Kelly [illegible]

AWARDS AND EXAMINATIONS

urg Lt Cdr W A M DOW
RCA 27 June 2005

urg Lt Cdr P J B COATES
MRCS 14 June 2005

urg Lt Cdr L A WHYBOURN
Dip Av Med 5 June 2005

urg Lt Cdr H D SHRIMPTON
Dip Av Med 5 June 2005

urg Cdr J E SMITH
ASCAB June 2005

OBITUARIES

Notice has been received of the deaths of the following

Surgeon Rear Admiral C McChintock

Surgeon Rear Admiral F M Kinsman

The editor would welcome any words in memory of them

J Royal Naval Medical Service 2005 91 2 126–129

It was intended [illegible] published in the following issue of Echinon 03/04 [illegible] unfortunately [illegible] did not arrive as expected. Despite the [illegible] the intended [illegible] would still be interesting [illegible] contents.

Ed

RNH Gibraltar Centenary Service

5 August 2004 Welcome Speech by

Surgeon Commander Robin McNeill Love Royal Navy
Commanding Officer RNH GIBRALTAR and Command Medical Officer

Your Excellency Lady Richards First Sea Lord Lady West Medical Director General Mrs Farquharson-Roberts Chief Minister Health Minister Commander British Forces, Monsignor Dean Commodore & Mrs Reed Captain Cosby Matron in-Chief Captain Bootland Mr and Mrs Waite Honoured Guests Ladies and Gentlemen

Welcome to our centenary service at the Royal Naval Hospital GIBRALTAR known to everyone on the rock as RNH It is much appreciated that you have given up this time in your valuable diaries to join us for this important occasion

In view of the current tercentenary celebrations I thought I would take this opportunity to briefly review the history of the Military Hospitals in Gibraltar over the last 300 years This will then put this hospital into its correct context

The very first provision for the care of sick and wounded seamen in Gibraltar consisted of 2 wooden sheds which accommodated 30 men each However the inadequacy of these 2 sheds came to light in 1739 when the Mediterranean Fleet arrived with 19 ships and 5000 men many of whom were sick

To assist a cowshed was offered up as a hospital but not surprisingly this was not the solution hoped for[1] The admiralty finally authorised the building of a 1000 bed hospital in 1741 This was the first military hospital now known as the Old Naval Hospital and it was in continuous from 1746 until 1922

To treat the common problem of scurvy in those days amongst military patients fresh oranges and lemons were used to produce fruit juice which was then conserved by adding 5 to 10 gallons of brandy to 60 gallons of juice The Navy also gave port wine to their convalescents I think we can assume that they must been very happy patients!

The worst outbreak of cholera in the Rock's history occurred in 1804 and almost 600 patients died In the August of that year all communication by land and sea with Spain was forbidden to prevent the spread of the fever

On 21 October 1805 the Battle of Trafalgar was fought and although Britain was victorious the sad news of the death of Admiral Nelson onboard HMS VICTORY tempered the rejoicing Although initially 26 wounded men were treated at the Naval Hospital from HMS VICTORY all but 6 were discharged back to their ship so that they were able to accompany Admiral Nelson's body back to England

The hospital again received casualties during the Crimean War In 1887 married quarters at Rosia were known as "misery hole" It seems that those in charge of estates have always had the same challenges of keeping their clients happy!

In 1887 the Royal Navy decided to establish trained sick berth staff and employ trained nursing sisters in Haslar and Plymouth Naval Hospitals The standards of nursing were so high that it was recommended that they should also serve in other Naval hospitals including Malta Hong Kong and Gibraltar

In March 1901 work was fully underway to build the current RNH In March 1902 Queen Alexandra s Imperial Military Nursing Service was established by royal warrant and in the same year the Naval Nursing Service became Queen Alexandra s Royal Naval Nursing Service

In 1903 Lt Col O Connor RAMC was appointed commanding officer of the new military hospital and served here until 1904 when the hospital became fully operational

On August 17th 1914 formal proclamation of war between Britain and Germany was printed in the Gibraltar chronicle

Both the Old Naval Hospital and the new military hospital (now RNH) saw extensive service in the First World War In those days an ambulance train used to run between the docks and the cots lift at Rosia The King and Queen visited Gibraltar in February 1912 and presented both naval and military hospitals with signed photographs In 1916 some of the patients who had been serving in the Crimea were suffering from scurvy and slipper nursing parties were held at the convent

Following the end of World War I the closedown of the Old Naval Hospital (RNH) occurred and on Thursday November 2 1922 the news of its closure was announced

The present RNH is a Military hospital was built in 1903 Its positioning was testimony to the professionalism of the designers because its situation here at the south end of the Rock means that it is just outside of the levanter cloud It was perfectly orientated constructed and designed such that the sun never directly pervades the wards Indeed the massive structure of this hospital has been a landmark for ships passing through the Straits of Gibraltar

On its opening the Military hospital only had 100 equipped beds and it was planned to increase this to 220 by January 1923

Between both World Wars, the current RNH served as an important base hospital and worked at capacity When the German Pocket Battleship DEUTCHLAND was bombed by Spanish Government aircraft in 1937 while at anchor at Ceuta, casualties consisted of 20 deaths and 80 badly burned patients as the bombs had exploded

[illegible] great mystery to many Gibraltarians is the time is to why the Dentelli-tud which was capable of very fast transit, brought her dead and wounded to Gibraltar One possibility was the world renowned reputation of the RAMC and QARANC medical and nursing services here

During the 2nd world war an underground extension of the military hospital was built It was actually a second complete underground hospital and was known as Gort s Hospital It was never fully operational because the lack of air conditioning made the treatment of surgical cases less than optimum

In 1963 the 60-year old military hospital was taken over by the Royal Navy and so RNH came into being It was a splendid occasion attended by his excellency the Governor General Sir Dudley Ward The Second Sea Lord and Admiral Sir Royston Wright the Flag Officer Commanding HM Dockyard and other distinguished visitors In a short speech the new Surgeon Captain invited the OC of the Military hospital to unveil a new plaque inscribed with the words 'The Royal Naval Hospital' As a permanent memorial the new hospital chapel was dedicated by the Bishop of Gibraltar on 1 March 1963 and among furnishings presented by the RAMC were 2 Salvador Dali pietrics (I wish to state categorically that I have not signed for those at my hand over) and a carved lectern

Throughout the latter part of this century RNH GIBRALTAR has served with distinction numerous UK service personnel and their families based in Gibraltar and of course the Royal Gibraltar Regiment Our maternity services previously run by QARNNS midwives and since 2002 by SSAFA are one of our key functions and very much appreciated by our families As a result in my UK and Gibraltarian children have continued to arrive in the world via RNH Indeed my own second son Matthew is an RNH obstetric graduate having been born here on 8 June 1990

So that Ladies and Gentlemen concludes the history of both the previous Old Naval Hospital and now this current RNH

On my arrival at RNH Gibraltar in 2002, I knew that my decision to take up this appointment had been correct. At this moment

RNH Gibraltar [illegible] thriving secondary [illegible] is improving in all [illegible] service all the time. As testimony to this RNH recently received the prestigious UK Health Quality Services (HQS) clinical accreditation award for its high clinical standards on the 29th March 2004.

I wish at this point to state publicly my thanks to Captain Boorland and his team at the Defence Medical Services Department for providing first class support to both RNH and indeed all the Medical Services in Gibraltar. My thanks also goes to his team of Commander Chris Lloyd and Lt Col Mike Beazley. They have worked tirelessly on RNH GIBRALTAR S behalf.

I must also pay tribute to Surgeon Commander Ken Aitchison s primary care centre, which has recently been externally re-validated as a training practice. Over the past two years RNH and the primary care centre have developed a first class relationship and I would like to thank Ken and his staff publicly for their support to us all. Finally Surgeon Commander Brian Smith s training dental practice deserves our thanks for the very high quality of dental care we all receive.

We are delighted that the Gibraltar Government s Health Minister has joined us today along with other members of the Gibraltar Health Authority, the GHA. You are all most welcome. Behind the scenes there are continuing good relationships between RNH and St Bernard s hospital. We look forward to forming future closer professional relationships with the GHA where practical whilst at the same time mutually respecting each other s respective and differing missions.

It is a great privilege for RNH that the First Sea Lord and Lady West have included us in their busy programme and we give you our heartfelt warmest wishes and thanks for being here today.

This is an important day for RNH and to have our Medical Director (General) Surgeon Rear Admiral Farquharson Roberts join us for the day demonstrates the pride we all have of working for the RN Medical Service. In addition Commodore Frank Reed as both head of the Medical Services branch and Commodore of the Institute of Naval Medicine is also very welcome. We [illegible] that you a both joined by your wives, Jeannie and Lizzi Finally and by no means least, Captain Lyn Gibbon, Matron in Chief QARNNS, is a ver important and welcome visitor because h distinguished nursing service has played – a continues to play – such a vital role in the life RNH.

I would like to thank the Chief Minister f coming today. Your very generous wor concerning the vital role that the Royal Navy h played and continues to play in the life Gibraltar during your fabulous dinner in Michael s Cave on Tuesday evening we enormously appreciated by us all. RNH has vital place in that special relationship betwe the Royal Navy and Gibraltar and we a therefore very honoured by your visit today.

I must also thank CBF Chief of Staff and Command guests for coming today as we exist provide a service for your personnel and th families.

Finally my thanks to all RNH staff and the families. Through lean staffing many of RNH staff are continually on duty every day a additionally every other night and so confined to the rock for much of the ti because of their critical skills. Both th ceremony and this evening s ball have involv literally round the clock work by many of y for a number of weeks. In addition to all th RNH has completely fulfilled all of it Command duties including training for and th proudly marching on, parade with their RNH c milies for the Freedom of the City of Gibralt yesterday evening. I want you to know that all of your efforts are very much appreciated and indicative of the total professionalism which characterise of RNH.

I cannot finish without paying particul thanks to he the Governor and Lady Richard You are both true friends of RNH and we appreciate your continuing and stalwart suppo It means a lot to us.

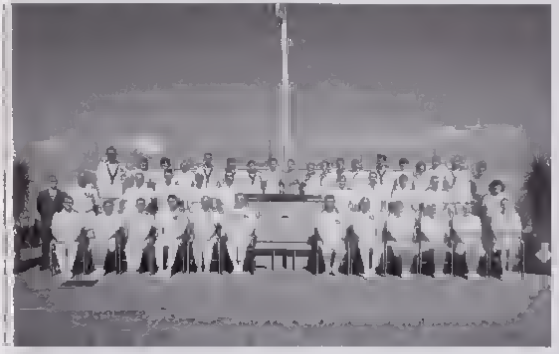
In conclusion honoured guests ladies a gentlemen it has been my privilege to be Commanding Officer of RNH for this centena year. I could not wish for more profession loyal or impressive staff and I will always lo back with enormous pride that I worked w

ch a first class team Whilst the majority of the rvice staff are from the Royal Navy and ARNNS we also have members of the Army d RAF working with us and indeed our new SAFA midwifery service In addition we have very loyal and dedicated civilian staff who are own form the UK Gibraltar and Morocco lany of these people have also worked above d beyond the call of duty to allow the two lebrations of today to take place We all have e thing in common our continuing pride in NH

The Band of HM Royal Marines are second to one in the world and we warmly welcome aptain Tony Smallwood and the RM Scotland and here today It is therefore with particular nour that musician Richard Barraball has mposed a new march entitled 'The Royal Naval Hospital GIBRALTAR March It is with great gratitude that I now hand over to the band of HM Royal Marines as they play this march in honour of RNH in its 100th year

Ladies and gentlemen along with Lt Cdr Roy Manwaring Lt Cdr Carol Stinton and Warrant Officer Paul Yeamans and the rest of my team I welcome you here today to the last Royal Naval Hospital in the world In view of this I like to think that in terms of Naval hospitals we are illustrative of the famous saying save the best till last!"

You re Excellency First Sea Lord Chief Minister Medical Director General Commander British Forces and distinguished guests thank you all for honouring RNH and our predecessors today with your presence



RNH Gibraltar Centenary Service

J Royal Naval Medical Service 2005 91 2 130–132

Administration Notices

Management Committee

Notice to subscribers

A Spring, Summer and Winter edition of the Journal of the Royal Naval Medical Service is publishe each year one volume comprising three issues The rates of subscription **(including postage)** are

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Acknowledgements

The assistance of those who are not authors but made substantial contributions to the study and/or preparation of the paper should be acknowledged as should the source(s) of grant support, equipment, drugs, facilities etc.

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Contents

Editorial

Welcome to my final edition as Editor of the Journal I was looking forward to retirement having ompleted 38 years Service but the Naval Assistant had other ideas He invited me to accept a one ear extension of service to take over as Deputy Medical Director General (Naval) in December with ome reluctance I accepted Surgeon Commodore James Sykes takes over from me as MOIC INM nd Editor of the JRNMS on 10 January 2006 His CV is in Service News.

I have enjoyed my time at INM enormously and am grateful to have had the opportunity to lead he highly specialised staff here The output from INM is crucial in the support of the people pillar of operational capability and I know that James will enjoy the challenges the job presents I have lso enjoyed albeit slightly more perversely my time as Editor of the JRNMS I take some pride in he way I believe the journal has progressed over the past 2 years and thank the management team or their support. In particular Commander Geoff Marshall who gives so much of his time to sorting out the business end of things and to Audrey Willcocks my PS for her many efforts all in addition o her real day job in formatting typing and generally getting the proofs ready I believe the Journal s sustainable but its fragility is based on two factors finance and support On the financial front the olution is to keep expanding the subscriber base, it is the support that will be most critical There re no permanent staff (nor funding to provide them) and if and when Geoff Marshall decides he as given enough or the support from article writers book reviewers Audrey etc wanes then it would early impossible to keep the show on the road

The theme for this final edition of 2005 is the MDG Symposium that was held in HMS Collingwood in September It was the first MDG(N) study day/symposium that involved the whole RNMS and attracted a full cross section of personnel The balanced programme had something for ll and the symposium dinner provided added opportunity to network, discuss issues and have fun some 260 people attended the day sessions and 200 the dinner The series of synopsis printed in this dition reflect the majority of the programme and have been produced by the presenters I hope you will get a full flavour of the breadth and depth of information imparted

The Journal Management Committee agreed at the last meeting that the theme concept should continue and the following themes for 2006 were proposed 01/06 Burns and Plastics (Abstracts rom the Combined Services plastic Surgery Society will be the centre piece) 02/06 – The proposal a Anaesthesia, 03/06 The proposal is Education I look forward very much to the luxury of reading hem for the first time when the Journal comes through my letter box unlike now when I have read he whole thing many times before it is posted!!

I finish with my wishes to you all for a very happy Christmas and a prosperous and healthy New Year and my thanks for your continued support for our Journal

Frank Reed

J Royal Naval Medical Service 2005 91 3 136–139

Medical Training
- DMETA's Aim and Organisation

Surgeon Rear Admiral P I Raffaelli
Chief Executive Defence Medical Education & Training Agency

The Defence Medical and Education Training Agency (DMETA) vested as a Defence Agency on 1 April 2003 inheriting training and education functions from the disbanded Defence Medical Training Organisation (DMTO) and the Defence Dental Agency (DDA) as well as assuming responsibility for the majority of military Secondary Care personnel from the disbanded Defence Secondary Care Agency (DSCA). The Deputy Chief of Defence Staff (Health) Vice Admiral Rory McLean is the Agency's owner but as Chief Executive of a Defence Agency I am accountable directly to parliament through the Public Accounts Committee and to the Minister the Under Secretary of State for Defence.

The Aim of the Defence Medical Education and Training Agency is to make available nominated Secondary Care personnel for deployments and exercises and to deliver appropriate medical and military training and education to specified standards to meet the operational requirement. The breadth of the Agency's role is not fully encapsulated by its title which emphasises the second part of the Aim. However for the presentation today I have been asked to focus on training issues.

DMETA ESTABLISHMENTS

Firstly let me give you a general overview of the Agency. DMETA has ten establishments under command. The Royal Centre for Defence Medicine (RCDM) in Birmingham which oversees the academic and research aspects of Defence Medicine and delivers nurse health care assistant, operating department practitioner and biomedical science training, for the DMS in partnership with the University of Central England at the Defence School of Healthcare Studies (DSHCS). RCDM is also the main receiving unit for Aeromedical Evacuation patients from around the world, and has clinical outputs similar to the Ministry of Defence Hospital Units (MDHUs)) the Defence Medical Services Training Centre (DMSTC) in Aldershot reports through the Commandant RCDM and delivers Phase 2 training for field medics from all three Services. Phase 1 training for Army MOs and Phase 3 specialist training for the DMS the Defence Post Graduate Medical Deanery (DPMD) in Birmingham whose main role is to oversee and monitor the higher professional training and continuing professional development of DMS personnel the Defence Medical Rehabilitation Centre (DMRC) at RAF Headley Court which delivers the accelerated return of injured or ill service personnel to the fittest physical psychological and social health to enable their return to duty in the shortest possible time the five MDHU (Derriford Peterborough Northallerton Frimley Park and the newest, Portsmouth which was formally established on 1st April this year which deliver healthcare to both military and NHS patients whilst providing a broad patient base for secondary care personnel to maintain their clinical skills and finally the Royal Hospital Haslar and Fort Blockhouse at Gosport which operates in a similar manner to the MDHUs but remains under a military executive and also houses the Agency's Headquarters.

TRAINING PROVISION

Introduction

DMETA is remitted to provide appropriate medical training and education to specified standards to meet the operational need to all DMS personnel and other personnel who have medical function. The training that is required by its Customers is delivered in accordance with the Defence Systems Approach to Training (DSAT) Quality Standard as mandated by the Director General Training and Education (DGT&E)

The Agreed Annual Training Provision (AATP) Process

The AATP is the formal process by which the single Services and DMETA decide what the training requirement will be for the following year. The Customer (eg 2SL or MDG(N)) articulates the training requirement annually in the form of a Statement Of Training Requirement (SOTR). This is then discussed with the various Customers and once agreed the combined SOTR is reproduced in the form of the AATP. This confirms the training to be delivered by DMETA in the following academic year and forms the basis of the Schedule of Courses that is published as a DIN.

AATP Composition

There are two parts to the AATP.

i. *AATP(I)* Training designated as internal includes all training that is delivered at or coordinated by the DMETA Training Delivery Units.

ii. *AATP(E)* Training that can be delivered more effectively and efficiently by utilising external providers.

DEFENCE MEDICAL TRAINING REVIEW (DMTR) & THE DIRECTORATE OF INDIVIDUAL TRAINING CAPABILITY (DITC) STUDY

Since the formation of DMETA we have been keen to ensure that we are delivering training as efficiently as possible. To this end the DMTR was commissioned in conjunction with DGT&E having been prompted by the then CE DMETA and completed in July 2004 as medical training had been excluded from the Defence Training Review. The DMTR concluded that Defence Medical Training was being carried out efficiently and to a high standard and also noted that our approach to Joint Training in many areas was more advanced than other Defence Training Organisations but did observe that some of the training being carried out by the single Services and the (then) Defence Dental Agency would more appropriately be delivered by DMETA. As a follow on to the DMTR we have commissioned the DITC study. This will include DSAT and it address implementation issues and consider boundary and interface issues between DMETA and non DMETA medical DIUs and is due to report in December 05.

TRAINING DELIVERY

Having described DMETA and medical training in a general context, I would now like to update you on some specific course which may be of interest to you.

Leading Medical Assistant Promotion Qualifying Course (LMAPQC)

A review of the LMAPQC was initiated last year in conjunction with INM and the ICC (RMS Nelson). The starting point for any course development is for the Customer (in the case of the RN this would be CINCFLEET) to formally describe what they want an individual to be capable of doing in the operating environment this is termed the Operational Performance Statement (OPS). In this case DMETA has worked with the ICC to develop the OPS.

The next step is for our Training Analysis Cell (TAC) to review the OPS carrying out a Training Assessment and put together a Formal Training Specification. This work has been done and the FTS for the LMAPQC is currently in draft form. However there has been some subsequent delay in progressing to the next stage while it is being decided whether to move to Symptom based treatment protocols and training. We are continuing to work with the RN on their preferred solution.

QARNNS Training

The QARNNS project was commenced in early 2004. The OPS and FTS identified the need for a considerable revision of the required training for a QARNNS Officer and a substantially updated NENO Course has been devised and is currently with the RN for endorsement.

The two Key Training recommendations were:

a. Training course length to be increased from 7 weeks to 24 weeks.

b. Training to be split into modules: Dartmouth/Lympstone/NENO. The training components will include a medical course, NBC training, Sea Survival Course, Divisional Officer training, ECDL training, Medical Planning, Weapons Handling and Field craft skills. All of this would be delivered before graduating rather than as an 'On Joining Training' approach at present. QARNNS would thus be operationally deployable from on graduation.

Other points of interest identified by the report were

a. The diversity of skills needed for a naval nursing officer to function in their operational role

b. The Primary Health Care Role for QARNNS

c. The need for accreditation for SUY career transition to officer

d. The benefits of involving DMETA in helping to refine the definition of operational roles and tasks

Battlefield Advance Trauma Life Support (BATLS)

A review of BATLS training has proposed several proposed changes designed to move the focus from Reserve training to training of Regulars while still actively involving the TA and also meeting their training requirement. The course content has been significantly revised and updated. Other main changes are

a. Course length changed from 2 to 3 days. an Entry Officers Course (EOC) has been successfully held midweek utilising both Regular and TA instructors

b. MOs will undertake the full course with individual assessment and the nurses the 3 day course but assessed as part of a team. The MA/CMT would participate in day one but only observe day 2. (As a result of concerns raised by the RN Customer Agent this proposal has been revised to enable MAs deployed as single handed practitioners to undertake the whole course)

c. The introduction of a distributed learning version of the course based on a CD ROM with supporting documentation

The course documentation for the new course have now been completed by the DCA in A&E and passed to the single Services for comment and subject to their endorsement, it is expected that the new course will be delivered in January 2006. AN area of ongoing concern however is the low numbers of volunteers to be course instructors and we are currently trawling again for volunteers. The number of courses that we will be able to deliver will be dependent on the success of the trawl and it is likely that we will be prioritising courses for personnel who have been identified for an operational deployment

Trauma Training in South Africa (TTSA)

TTSA provides an opportunity to carry out specific to role training in ballistic and trauma management to meet the required training objectives. This type of experience is thankfully not easily obtainable within the NHS. The training takes place at the Johannesburg Hospital Trauma Unit in South Africa. It is available on tri Service basis to the following suitably qualified and experienced personnel

a. Regular and Reserve DMS surgeons (SHOs SpRs and consultant)

b. Operating Theatre Nurses (OTNs)

c. Operating Department Practitioner (ODPs)

Surgeons deploy for a 12 week period and OTNs/ODPs for 6 weeks

Medical Assistant Professionalisation

I fully understand the importance of this work. It is however also important to set this into context. The role of DMETA and other Defence Training Agencies is to train personnel to the meet the OPS as required by the single Service Customers. One of the difficulties previously constraining the desire to professionalise the MA cadre is that there has been no directly comparable Allied Health Professional group in the NHS against which we could map the MA OPS. However over the last year or two there have been a number of initiatives in the NHS which are leading to formal recognition of certain professional cadres against which MAs (and CMTs) can be benchmarked. Additionally the new NHS Key Skills Framework agenda will provide further opportunities to take this forward. We do need to recognise however that we need to look not only at initial training but also the ability for personnel to then maintain their accreditation

There are Four main pathways to qualification

a. **Clinical Practice** The Medical Care Practitioner(MCP) is the new working title for

what was previously called the Physician's Assistant Competencies for the MCP have been published by the NHS together with the pathway to gain qualification The pathway options move from Clinical Technician to Assistant Practitioner with final registration as a MCP Work is being undertaken to correlate relationship between Clinical Technician for MA/CMT and Assistant Practitioner for LMA The pathway maps well against the RN MA OPS

b **Pre-Hospital Care.** Positive negotiations have been made with the Ambulance Service Association and Ambulance Service Education Committee to establish a paramedic pathway for military personnel Initially the requirement is for 16 CMTs per annum to be trained and registered to paramedic level The Chairman of the Education Committee is identifying Ambulance Trusts that will be willing to participate in a military paramedic pathway It is planned that the initial pilot course training will begin in January 2006

c **Medical Education** Options include the Further Education Teaching Certificate and the Post Graduate Certificate in Education These opportunities arise primarily for staff employed at DMSTC the DSHCS and HQ DMETA

d **Administration.** The Association of Medical Secretaries Practice Managers Administrators and Receptionists (AMSPAR) Diploma in Practice Management is currently delivered through DMSTC in association with Farnborough College Further options include a Foundation Modern Apprenticeship in administration and both first and higher degrees in medical/business management together with developments in Advanced Modern Apprenticeships and Foundation Degrees

There is considerable work going on to take forward all four pathways Not all of these will be applicable to everyone and much will depend on how each single Service wishes to employ and deploy their personnel Dependent on how some of the NHS changes progress I intend issuing an options paper to the MDGs early next year in which we will lay out in more detail how each of these qualification pathways can be followed and what type of employment or placements will be necessary to gain and maintain qualification Once the MDGs have confirmed their requirements we can then put in place the necessary training infrastructure.

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MMHS

The Managed Military Health System for Force Generation - Project

Air Vice Marshal E J Thornton QHP
Director General Health Care

The only thing harder than getting a new idea into the military mind is getting an old one out
Basil Liddell Hart

INTRODUCTION

Air Vice Marshal John Thornton is the leader of the Managed Military Health System for Force Generation (MMHS) Project Team - a major Defence Medical Services Department (DMSD) change management project. He explained that the MMHS Mission was

'To set in place a Managed Military Health System for Force Generation which will maximize the number of military personnel fit for task'

He emphasised that he is running a Project not a Study and that the Project is concerned with all elements of Health (Health Promotion / Health Protection / Healthcare) and not just Healthcare. That the MMHS will be an end to end system, from pre recruitment to return to civilian life in the UK peacetime environment delivering common outputs, processes and standards. And that it will be Single Service at the Point of Delivery.

He outlined the background to the Project and why the Defence Management Board decided that there was a need for change in the way in which the Defence Medical Services contribute to Force Generation. he explained how he envisaged the MMHS will achieve that aim and finally he described the high impact changes that will bring about the improvements required of an effective MMHS. He went on to explain that the Managed Military Health System for Force Generation Project (MMHS) is about delivering a first class health service to Servicemen and women and entitled dependents in the UK. In so doing it will contribute to operational effectiveness and maximization of the fit fighting force by reducing to a minimum the amount of time that Servicemen and women are unfit for their primary role for medical reasons.

WHY WE NEED TO CHANGE

Whether we in the DMS like it or not the Defence Management Board decided that the current military health system lacks coherence, with many different arrangements in place for the management and delivery of health promotion activity, health protection measures and the delivery of health services. Minor tweaks to the current system are not the solution. We need to build on what is currently done well and develop transparent common processes with optimized use of resources and expertise coupled with clear responsibility for and accountability to a common system across all three Services. We need to move away from the current tendency towards stove piping and take a country wide approach with services that provide optimal capability across the military population map.

THE KEYS TO SUCCESS

AVM Thornton stressed that a crucial factor in the success of the MMHS is the quality of Primary Healthcare (PHC) delivery and its management. By being the central focus for patients and their outcomes PHC is fundamental to maintaining quality in the whole system. quality in PHC should drive it to monitor and promote quality beyond its own boundaries. Co ordinated PHC quality systems for example for the intelligent tracking of patients from presentation to return to employment will provide early indication of failure and facilitate timely remediation.

Secondly the MMHS Project Team has identified eight high impact changes that can be adopted across all three Services. These will build on the improvements that have already been achieved in Rehabilitation, Mental Health Services and Healthcare Commissioning.

Change 1 – Health Strategy
By implementing a Health Strategy for the Armed Forces we will
- Raise the profile of health and wellbeing in the Armed Forces
- Enable our people to make informed lifestyle choices
- Become a leading organisation in promoting the health and wellbeing of our people

Change 2 – Common Policies, Processes and Standards.
By ensuring common policies, processes and standards across all three Services
- Patients will enjoy consistent high quality healthcare wherever they serve
  Those working in the DMS will benefit from working in a culture where sustained improvement matters
  We will provide an excellent and responsive healthcare system that meets the needs of our people

Change 3 – Managed Healthcare Pathways
A healthcare pathway covers all events occurring during an episode of illness or injury. By improving the management of healthcare pathways we will
- Deliver effective treatment to patients in the optimum time
  Identify and resolve problems in our healthcare system quickly
  Contribute to Force Generation by getting ill or injured personnel fit for task faster

Change 4 – Bringing Healthcare Closer to the Patient
The MMHS will where possible move healthcare out of hospitals and nearer to the patient. The benefits will be
  Quicker access to some specialised health services
  Shorter travelling and waiting times for patients
  Improved opportunities and job satisfaction for GPs and Nurses with specialist expertise

Change 5 – Integrated Community Healthcare.
By improving the co-ordination of Health Promotion activity, Primary Medical and Dental Healthcare, Rehabilitation, Mental Healthcare, Occupational Health, Welfare Services and MDHU interfaces we will
  Ensure coherent coordinated health and administration services which place the patient at the centre of their healthcare

Change 6 – Improved Management of Defence Mental Health Services
Improving the capability and management of Defence Mental Health Services will
- Provide the highest standards of mental healthcare
- Attack stigmatization associated with mental health issues

Change 7– Stand-Up Dg Healthcare Organisation
The DG Healthcare organisation will
- Improve performance management of the delivery of healthcare
- Enable patients to be diagnosed and treated more quickly where appropriate through purchasing enhanced healthcare services
- Drive continuous improvement of health and healthcare
- Manage Defence Dental Services

Change 8 – Managed Healthcare Finance
Efficient management of healthcare finance will
- Ensure best possible value for money from Defence Healthcare
- Provide the evidence required to make robust cases for additional expenditure to improve health services

MMHS TIMETABLE
The Project Team outlined their strategy for delivery of the MMHS in MMHS PAPER 7/05. The delivery organisation will stand up on 1st Apr 2006 however not everything will be complete by that date and it is inevitable that the team will have identified work that will continue or start beyond 1st Apr 06. DG Healthcare will continue to work with the single Services, DMETA and the DDS to ensure real and sustained improvements in the quality of healthcare and that the Defence Medical Services are resourced to provide high quality healthcare delivery.

SUMMARY
In summary the Managed Military Health System for Force Generation will
- Allow better understanding of health issues and illness patterns in the Armed Forces
- Ensure optimum health and medical fitness of service personnel throughout their military careers by

- Promoting health
- Protecting health
- Providing timely properly co ordinated healthcare from military and civilian providers
- In conjunction with DMICP provide a seamless system of patient care and administration involving all healthcare providers
- Enable all military personnel to make good health decisions
- Ensure a smooth transition to NHS care on completion of Service.
- Improve the morale of those in the Defence Medical Services through working in a high quality organisation

CONTACT WITH THE MMHS TEAM

Should you wish to contact the MMHS Project Team the POC is Captain Stevan Jackson RN

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References.
1 MMHS PAPER 7/05 DMSD/30/09/01 dated 16 May 05

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The Defence Medical Operational Capability Project

Major General L P Lillywhite MBE QHS
Director General Medical Operational Capability

In April the Chiefs of Staff agreed to the establishment for 18 months of a 2* Director General Medical Operational Capability (DG Med Op Cap). Subsequently Major General Louis Lillywhite who at the time was Director General of the Army Medical Services was selected.

During the 18 month of the project DG Med Op Cap will undertake a comprehensive review of the operational medical services to ensure that they are fit for purpose and where they are not to prepare a plan to make them so. Fit for purpose means a health service that delivers an appropriate standard of patient care on operations which meets the operational requirements of the Armed Forces in terms of size and structure and is responsive to change in both the operational and in the peacetime healthcare environments. The review will be on an end to end basis to include everything health related that occurs within the operational medical services prior to during and after deployment and for the patient from point of wounding to return to health or discharge from the Services. It will be co-ordinated with the review of health provision in peace (via the DG Healthcare Project) and ongoing work on training by CE DMETA.

The genesis for the project is the belief by MOD that the evolution of the operational medical services over the last 15 years has led to some incoherence. Prior to the end of the Cold War the single Services were able to rely almost exclusively on their own medical services for all their operational health needs. Since then operations have become increasingly joint with a casualty on almost all operational deployments being at some stage the responsibility of at least two of the single Services medical services and sometimes all three and the NHS. It is thus increasingly difficult for any single Services on its own to plan or exercise their isolated parts of the operational medical services. Once deployed there is a lack of the appropriate processes and procedures required to manage a medical treatment and transfer system to the standards expected in the modern age. For example there are no systems in place to enable any timely feedback during an operation from rearmost medical facilities such as NHS hospitals to forward units. More forward units are thus unable to assess the quality of care that they provide and respond appropriately.

During the last decade there has also being significant change in the civilian health environment and the pace of change does not show signs of slowing. This change involves covers the whole spectrum of prevention diagnosis and treatment changes in the boundaries and regulation of health professionals and organizational changes. It is inevitable that some of these changes should be reflected within the operational environment. It is also probable that some should not be so reflected but distinguishing the one from the other particularly with different parts of the NHS going different ways is not easy.

The DG Med Op Cap project will seek to articulate an up to date requirement for deployed medical services compare that requirement to our current capability and measure the difference between the two and make recommendation on how to address such gaps. Whilst the project will seek to identify real and substantive enhancements it will more importantly seek to put in place procedures and processes to ensure that the Armed Forces Medical Services have the ability to assess change in both the civilian and military environments in order that it can continuously evolve rather than be subjected to

1 Excluding those aspects that are already included in the DG Healthcare Project

intermittent major change. It will also put in place procedures and processes that ensure that when a patient passes between medical units the journey will appear to the patient to be as seamless as possible with continuity of care and quality care being assured.

The Project is divided into two major phases. There will be a study phase between September 2005 and July 2006 resulting in recommendations and an implementation plan that will commence in September 2006.

It is intended to provide the greatest possible opportunity for participation whilst at the same time ensuring timely output of analysis and recommendations. The majority of the output will be provided by a small number of tri-Service Regular/Reserve multi-professional working groups. Wider participation will be provided by use of sub groups, one day conferences on specialist subjects, using the DMSD Internet and Intranet sites to provide the opportunity for feedback and drawing on external bodies and experts. The three main Working Groups have formed. The first task of the Clinical Working Groups is to articulate the clinical requirement using language that is understandable to non medical staff - "beds" is an outdated metric and only relevant to one element of the deployed medical services. The Organization Working Group's first task is to identify the military requirement and to identify to what extent the sum of the military and clinical requirements are currently met. The Personnel and Training Working Group's main work will start once the requirement is clearly articulated. In the meantime it will seek to identify current training (both initial and ongoing), the extent that peacetime clinical experience provides opportunity for practicing operational clinical skills and seek to identify some of the implications of changes in NHS working practices and Regulation.

A major difference between the DG Med Op Cap and DG Healthcare Projects and many that have gone before is that the current ones are medically led without as pressing time constraints as previous studies. There will be opportunity for any who wish to provide input, with input being sought both via the Chain of Command and via the DMSD Web site.

2 For example: Civilian Honorary Consultants, Royal Colleges and other professional bodies, and the Departments of Health.

J Royal Naval Medical Serv ce 2005 91 3 145-146

Medical Operations

Surgeon Commodore Lionel Jarvis Royal Navy
Director Medical Policy formerly Deputy Director Medical Operations

The Fleet Medic d Operations Division embraced within MDG(N) s organisation but delivering medical support to Commander in Chief Fleet, is based within the Fleet Headquarters in Leach Building on White Island The first 9 months of 2005 were a busy period with expectation of further significant activity ahead for Med Ops

The year started dramatically with an international response to the Boxing Day Indian Ocean Tsunami Permanent Joint Headquarters (PJHQ) were responsible for co ordinating any UK military response with Fleet HQ considering potential assets with the larger pointing clearly at the medical capabilities within RFA ARGUS on this occasion should it sail there would be less demand for surgery but more demand for humanitarian medical aid inclusive of expertise in paediatrics infectious diseases public health and environmental medicine with a primary care lead a template was developed preparing for a targeted skill mix fit for the task In the event a naval task force did not deploy but great work was undertaken by HMS CHATHAM as well as a number of Royal Fleet Auxiliary ships and Survey Ships

Meanwhile ongoing operations in Iraq and the Arabian Gulf occupied medical officers afloat and a large number of RNMS personnel deploying to work within the Field Hospital at Shaibah Airfield in Southern Iraq International efforts will determine the longevity of that requirement and the continuing impact upon RNMS personnel At the same time Fleet Med Ops continued to support the ships deployed to Atlantic Patrol Ships (APT) North and South all busy in their respective ways

In March 2005 the Primary Casualty Reception Facility was staffed to a full 100 bed complement to embark on RFA ARGUS to participate in Operational Sea Training in Plymouth under the watchful eye of FOST and his team This was an extremely successful exercise demonstrating the versatility and commitment of the embarked medical staff making the PCRF ready for FOST inspection with very short notice in a previously untried and untested scenario ARGUS was visited during the exercise by Second Sea Lord and MDG(N) who were impressed by what they witnessed many lessons were learnt but all should be proud of their contribution

The next activity for RFA ARGUS and the PCRF was to provide medical support to the Trafalgar 200 International Fleet Review of 28 June 2005 offering afloat enhanced primary care and further opportunity to advertise the capabilities of the PCRF to the wider community as well as a chance for the few to participate in a fleet Review

Medical Support to the Royal Marines has been active particularly with headquarters support to the evolving concepts of Littoral Manoeuvre and the need to ensure that the rapid forward movement of Commando is backed up by an equally light, agile and manoeuvrable medical support element. The medical teams at Commando Logistic Regiment, backed by 3 Commando Brigade are heavily committed to taking the initiative and driving forward an agenda for modernisation in line with the stated concept of operations The arrival of 3 relatively new hulls, HM Ships OCEAN BULWARK and ALBION with new all terrain vehicles and communications for Commando offer great opportunity to test operational capability in 2006 with winter exercises again supported by the presence of RFA ARGUS with PCRF On this occasion the Royal Naval Reserves have been offered place to work alongside RNMS personnel at a full 100 bedded capability

Further Fleet Medical Operational activity

during 2006 will follow RN deployments around the world whilst engaging with PJHQ on medical support to Joint Operations in Iraq and elsewhere Work will also continue with respect to planning for future maritime platforms including the imminent launch of the LSD(A) class, and later on the Type 45 and CVF The planning for a replacement for ARGUS is ongoing with a continuing aspiration for a Joint Casualty Treatment Ship

Subsequent speakers will talk more specifically of their experiences in many of the areas presented in this introductory overview of medical operations embracing RN medical support during the past year to hurricanes tidal waves, peace keeping and anti-terrorist operations plus ongoing RN medical support ashore and above and below water

J Royal Naval Medical Service 2005 91 3 147

Fleet Programming

Lieutenant Colonel T Daniels Royal Marines

To programme and resource todays and tomorrow s Fleet to fight and win

In a sentence the FLEET N5 responsibilities are outlined above The long term programme is constructed, balanced resourced managed and handed off to N3 for execution from within Leach Building by representatives of the Fleet Air Arm Submariners Royal Marines the RFA and the Surface Fleet all huddled together in a single office the Programme Shop A wide variety of Strategic influences are synthesised in this activity and endorsed every 6 months by the Maritime Commitments Strategic Steering Group to ensure that the Fleet output is relevant and efficient. The current priority for UK defence is to be A Force For Good in support of the Global Counter Terrorism (GCT) campaign this translates into stabilisation of or rapid response to crises

The Force elements to undertake this activity are complex high tech and manned by a professional Naval service encompassing a myriad of skills and specialisations One of the constraints is the enduring requirement for Medical support generally a long way from home in a dynamic situation characterised by resource constraints As the intent above shows the force generation process must be detailed and exhaustive in order to meet all current and potential future tasks within readiness and preparation times Notwithstanding the requirement, there are fiscal challenges that have to be met both within the Front Line but also within the agencies that support the Front Line Acknowledging those constraints generation of forces hinges around Tier 1 training (OST) Tier 2 Training (JMCS) and the JRRF in order to furnish Force Elements to GCT the Gulf and NATO

There is current examination of how future programming can be improved upon but the basic principles of supporting UK Strategic Intent and National Priorities by applying effect from Operational Capability where it is either most likely to be used or can have a demonstrable impact on UK hegemony and friendships is sustained Developments are likely to be in the area of force generation and readiness requirements and are being staffed around the FLEET at the moment.

The tempo of activity is high with far reaching deployments planned to the Far East The Subcontinent and the Gulf of Guinea in the next 12 months complementing the enduring commitment to Ops in the Gulf and disaster relief efforts in India In all of this there is a clear and challenging requirement for Medical Support

J Royal Naval Medical Service 2005 91 3 148–149

Telemedicine in the Royal Navy

Surgeon Captain P J Buxton Royal Navy
DCA Radiology and Telemedicine

The primary role of the Royal Naval Medical Service is to deliver the healthcare component of Naval operational capability. The personnel delivering this healthcare are likely to be on their own and will be undertaking it in locations remote from additional help. No matter how senior or experienced they will always encounter clinical problems with which they are unfamiliar. The use of telemedicine technology can be of assistance, not as a substitute for well trained medical personnel but as a means of enhancing their capabilities.

Bright shiny boxes full of technology however have seduced many into inappropriate purchases without identifying the actual requirement and determining the best method of addressing it. The requirement must be to provide medically competent advice in a timely manner and for such advice to be appropriate to the operational environment.

There are several technologies of varying sophistication that could address this requirement. The utility of simple voice communication is underestimated as a telemedicine tool. Also underestimated is the difficulty of providing such a system in an operational clinical setting. For example it is relatively straightforward to talk to the UK from a ship from anywhere in the world but is that capability available in the Sick Bay itself or does the person seeking advice have to go to the MCO to make the phone call leaving the casualty to his own devices?

When the requirement is less urgent e mail can be used but this too is not without its difficulties. There are simple technical problems such as whether it is allowed in the operational setting and how to provide data confidentiality. There are also non technical problems such as knowing to whom to send the request. The e mail conversation should form part of the clinical record but the nature of this form of communication does not easily lend itself to formal recording. Policies can be written to mandate this recording but are more likely to observed in the breach than the observance.

The ability to add images to an e mail can be of immense benefit but here too there are limitations and problems. Sophisticated though they are modern digital cameras will still produce images of skin with a green hue if taken in fluorescent light – an unwanted additional challenge when trying to characterise a rash. Likewise their spatial resolution is still insufficient to capture all of the detail of a radiograph. Camera acquired images of radiographs can be of enormous value in deciding on a management plan or for providing advice but they cannot be used for final diagnosis.

Clearly telemedicine relies upon having a telecommunication link and here too this should be matched to the requirement. Voice and e mail communication requires very little bandwidth. e mail referrals with images have been successfully sent from South Georgia on a 2 kb/s link. At the other end of the scale the stated requirement for the CT scanner at MNDE(SE) in Iraq was to be able to return a written diagnostic report within 60 minutes of scanning. This requires a 1MB/s link. With the new Scot satellite fit on RFA Argus there is no reason why this could not be achieved on PCRF.

Whatever communication links are used it is important that they are reliable and "transparent" to the user. The last thing one needs when faced with a difficult clinical problem is to be presented with an unwieldy user unfriendly method of obtaining advice.

In an attempt to improve the usability of and access to telemedicine the Defence Medical

Services Telemed [illegible] software program that encompasses the ideas listed above It can accept e mail or web based referrals automatically archive them and alert the relevant clinician This system won the prestigious British Computer Society Award for Innovation It is currently in use with the DMS and has been used for a NATO telemedicine trial

Protecting patient confidentiality is extremely important and there are many points in the telemedicine process where breaches of this confidentiality can occur There are many techniques for protecting information including public key encryption methods to protect individual files and software techniques to encrypt the transmission itself As with so many things however the simplest solutions are the best Anonymising the data so that the only person who knows the identity of the patient is the referring clinician can overcome most of these problems If there is no need to identify someone then they should remain anonymous It is difficult to see for example how knowing the name of the person with a skin rash is going to make any difference to the diagnosis

Telemedicine and modern communications offer a real opportunity to change the delivery of healthcare in the RN This will not be achieved by providing a First Lieutenant with a telephone and an e mail account not by a robot attached to a network but by providing our existing staff with relevant timely and competent advice to enable them to be even more effective than they are already

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Medical Support to Littoral Manoeuvre

Surgeon Commander R A Ross Royal Navy
Senior Medical Officer 3 Commando Brigade Royal Marines

INTRODUCTION

Arguably the most flexible fighting force in the world today the Royal Marines Commandos continue to develop their distinct amphibious skills refining their techniques equipment and concept of operations (CONOPS) In this pursuit they are deadly serious totally focused and intent always on achieving their mission objectives It says a great deal for their effectiveness that they have inspired the build of three major vessels the LPH *HMS Ocean* and the LPDs *HMS Albion* and *HMS Bulwark*

LITTORAL MANOEUVRE

In order to understand their requirement for medical support it is first essential to understand the modern concept of littoral manoeuvre The littoral includes coastal sea areas and that portion of the land susceptible to influence or support from the sea This definition however ignores the possible influence of, for example long range ballistic missiles

Much of the world s population is based in the littoral supporting economies founded on sea borne trade the result of the prodigious lift capability of transport ships Estimates put 60% of the world s population within 100 km of the ocean with almost a billion people living in cities close to the sea Many littoral states have invested in significant sea denial capabilities including submarines mines surface-to surface missiles shore based artillery and fast attack craft Control of the world s sea lines of communication and its strategic straits is essential to ensure commercial and economic freedom and prosperity One way to do this is to maintain an effective self supporting amphibious capability able to deploy worldwide

Amphibious warfare no longer consists of men running down a landing craft ramp straight into a hail of machine gun rounds Neither does the enduring beach centric view of amphibious and littoral operations reflect the way Royal Marines prosecute their business The definition of littoral deliberately shifts focus away from the beach removing the operational pause associated with securing the beachhead and building up combat power ashore The classic linear model employed extensive Naval Gunfire Support telegraphing intent and affording limited manoeuvre The ultimate aim of all amphibious operations by definition operations launched from the sea by naval and landing forces against a hostile or potentially hostile shore, is *always* to influence decisions and events on land

Joint Effects Integration a force multiplier Effects based Operations and Network Enabled Capability are now part of the amphibious CONOPS as is the doctrine of Information Superiority based on the growing importance of ISTAR (Intelligence Surveillance Target Acquisition and Reconnaissance)

Littoral manoeuvre involves using the whole littoral as an operational manoeuvre space from which a sea based Joint Amphibious Force can threaten or apply and sustain force ashore A Amphibious Task Group (ATG) can move a maximum of about 360nm a day In 24 hours it steaming an ATG can cover 720nm of coastline Maximum reach ashore is 110nm which means an ATG positioned off an enemy coast line maintaining low target exposure to the enemy by using the Earth s curve to provide a reverse slope can exert influence over 940nm or 1740km Tactical reach could be further enhanced by use of Lily Pad and Ensblin Platforms at intervals along the coast.

They are not quite there yet however with aspirations for over the horizon operations limited by some of the current equipment Surface manoeuvre still depends on conventional displacement landing craft an

Mexe floats whose low speed and agility preclude long transits in rough weather. By 2018 it is planned that the UK Amphibious Force will be able to conduct a co-ordinated air and surface assault of up to 2 Commando Groups during a cycle of darkness of 6 hours, launching from beyond the horizon to achieve simultaneous effects on objectives out to a range of 110nm. Littoral manoeuvre is clearly now heavily dependent on Support Helicopters (SH) and in addition to two dedicated squadrons of Seakings the Royal Marines routinely operate with CH47 Chinook SH. On the ground the Corps employs a mixture of tracked and wheeled vehicles and is currently introducing the new All Terrain Tracked Vehicle (Protected) VIKING providing protection and mobility in the land battle. At the low tech end of the spectrum the Royal Marines still pride themselves in the versatility of their simplest manoeuvre unit: the combat boot. Principally Cold Weather Warfare specialists, Royal Marines are capable of operating in all environments and in any climate. With fighting units now reorganised into the final Commando 21 structure and with BOWMAN secure communications coming on line, 3 Commando Brigade is poised to deliver high tempo, agile and flexible littoral manoeuvre. This prospect creates challenges for the medical support.

MEDICAL CONCEPT OF OPERATIONS (MED CONOPS)

The configuration of medical support to 3 Commando Brigade should be flexible and will normally be determined by the nature of the operation, the casualty estimate and specific medical intelligence. It should support the 1-2-4 hour principle allowing 1 hour from point of wounding to receiving first aid and Role 1 resuscitation in the Regimental Aid Post (RAP), 2 hours from point of wounding to Role 2 surgical resuscitation (life and limb saving surgery) and 4 hours from point of wounding to primary surgery, ideally in a Role 3 facility[4].

Front line units maintain first aiders in every sub unit and fighting companies are supported by Medical Assistants capable of specialised first aid under fire. Each unit has organic Role 1 capability in the form of an RAP with responsibility to collect casualties from the point of wounding. The RAP comes under command of the Unit Impress and Record Officer and fulfils other functions including initiating field records and providing environmental health support for force protection. Once it receives casualties the RAP requests assistance to initiate rearward evacuation.

Role 2, surgical resuscitation can be carried out afloat if SH assets are available and if lines of communication have not lengthened significantly. In the very near future, Role 2 capability will be fitted in the LPH and both LPDs in addition to the CVS. The Dutch LPD ROTTERDAM also has a Role 2 facility supported by ambulance CB 90 boats.

These Role 2 facilities could be directly manned or they could be manned by Commando Logistic Regiment Medical Squadron augmentees. Alternatively Medical Squadron could establish ashore in a variety of configurations and at various locations depending on the situation. Essentially modular elements could be sent forward as far as the RAP. Usually however the smallest functional unit is the Commando Forward Surgical Group (CFSG) comprising two surgical teams supported by an ambulance troop. Royal Marines bandsmen and capable of setting up in collective protection. The CFSG is mobile and can move either *en masse* or in leapfrog fashion sending 1 team forward to set up while the rear team continues to operate. A CFSG usually requires several 4 tonne trucks to move equipment, tents and personnel and in such a configuration it may be difficult to keep pace with the fast moving, air portable assault troops. During Op TELIC a CFSG was successfully moved by two CH47 SH but at the expense of all tents and almost all vehicles. This aspect remains a challenge and improved air portability remains an aspiration.

The Brigade medical CONOPS allow Role 1 to request SH casualty evacuation directly to an available Role 3 facility (including RFA ARGUS, Field Hospital or Hotel Nation Hospital). Indeed overfly of Role 2 may be preferable in situations where there are manageable numbers of casualties. In situations when SH are not available the Medical Squadron ambulances will collect casualties from Role 1 facilities and subsequently transfer them to Role 3 ashore when stable.

LOGISTIC SUPPORT

Medical re supply has previously been segregated from other logistic support functions

This anomaly has now been eliminated and all medical re supply occurs within the regular logistic chain ensuring a robust land and air re supply capability. Medical "kit" has been modularised and is finally standardised across the Brigade ensuring that sensible levels of the correct materiel are deployed by each medical sub unit. This simple organisational manoeuvre has greatly enhanced medical operational capability. Sustained operations are supported by a dedicated medical re supply squadron (Army).

OUTSTANDING ISSUES

The training, testing and re-training of all personnel responsible for delivery of first aid and resuscitation at Role 1 requires scrutiny with a view to defining standards and establishing capability gaps.

Further work is needed to refine the configuration of the two identical CFSGs. A CFSG-light option may be necessary to allow airportability.

Communications on the battlefield, particularly with mobile elements, will always be challenging and it remains to be seen how this will be mitigated by the introduction of BOWMAN.

Having proven the capability of the two CFSGs there may be an argument to develop a third CFSG. Staffing this with appropriate hospital based specialists would be a major challenge.

SUMMARY

My personal view after some 16 years away from 3 Commando Brigade is that there has been a vast improvement in the medical infrastructure, logistics and communications at Unit level. The defined treatment timelines provide medical staff with much needed leverage in securing scarce SH assets and the casualty evacuation plan from Role 1 to Role 2 is cogent and workable. The Role 2 capability is much more flexible and robust and can now be projected forward to where it is needed. And of course, we are now supported by a superb Role 3 facility afloat.

All in all medical support to Lit M is in good shape, even if we are all still "dropping" about our tents!

ACKNOWLEDGEMENTS

I am grateful to my colleagues in 3 Commando Brigade Headquarters who, possibly unwittingly, have provided me with a crash course in LitM. Of necessity I have borrowed heavily from their previous staff work in completing this paper.

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J Royal Naval Medical Service 2005 91 3 153 154

Medical Manpower Planning Now and Future

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Medical Branch Manpower Manager

The first stage in being able to plan manpower is to be able to calculate the requirement. For the Royal Navy the Live Requirement gives the number of Officers and Ratings that the Naval Service needs broken down by Rank/Rate and Specialisation (in other more detailed ways too). This information is date related and shows where billets in Schemes of Complement are planned to reduce or increase (for example through organisational change) so it can show how the Requirement is set to change over the next 10 years. Yet further changes are always inbound. Thus planning to the Live Requirement is not sufficiently accurate. To plan effectively we need to understand not just where we know we are going but also where we think we might be going. This is called the Headmark Requirement.

The Headmark includes the manpower implications of all known and agreed STP and programme changes but also includes all anticipated changes in the Requirement. It provides a corporate aiming point which inevitably includes a level of risk which the PPO is prepared to accept. This Headmark Requirement is used by Manpower Planners to prime computer modelling tools so they can decide what targets need to be set for the growth of the right numbers of trained manpower.

It will be no surprise to you that the overall trend for the RN Requirement is downwards. The current aim is for just over 36 000 by 2008. Similarly the overall trend of the Armed Forces in general has been moving in the same direction since the 1980s through to the present day. In a Naval context it will also be no bolt out of the blue that Ship Schemes of Complement have become increasingly small. However it is interesting to note that the reductions are greatest for the less skilled due to increased automation. This trend is not just true for ships: with increased contractorisation there is a reduced requirement for more junior personnel whilst increased Jointery leads to matching for example Army Lt Cols with Cdrs when a purely RN perspective may have considered that a Lt Cdr may have done. If you consider the structure of the Naval Service as a pyramid then the impact of this is that the pyramid has become increasingly steep with the problem that we struggle to grow sufficiently experienced personnel in some Specialisations.

However there is more to manpower planning than merely the Headmark Requirement. The Live Requirement never plunges to the same extent as the Headmark. Therefore determining what manpower the Naval Service requires is far from a precise art. Even once known getting the right Specialisations in the right numbers at the right rank or rate is even harder. This is particularly true when looking at the Pyramids within Pyramids for the Royal Naval Medical Service. The RNMS has a significant number of small groups of specialist qualified personnel. Comparing with the Logistic Branch of some 600 Logistic Officers they are predominantly in mainstream generic logistreams with less than 10% in the specialist streams (CMA and Barristers). Compare this to a Medical Officer requirement of less than half that number divided into 20 different specialty groupings. Nursing Officers are equally complex with a similar numbers of subdivisions but an overall requirement of less than 100.

So how can we plan the Requirement? The Requirement varies with Scheme of Complement changes and acknowledges the need for sufficient latitude for personnel in the Margin: training sickness terminal leave leave between jobs etc. The Strength will vary with gains from

- Numbers Recruited including sideways entry and transfers
- Numbers kept for longer
- Numbers on FTRS

and losses [illegible]

- PVR
- Transfers out
- Other wastage [illegible]
- In extremis and [illegible] expected redundancy

A snapshot of RN Medical [illegible] Bearing against Requirement shows [illegible] common with the overall RN manpower position However the RNMS is numerically weaker than the overall Naval picture with an underbearing of around 8% This is less problematic in overall number terms but becomes a concern when we look at specialty imbalances, and particularly shortfalls within some critical shortage categories IT and AE nurses are a good example of such an imbalance So overall numbers are moving towards balance but there remain significant skill mismatches

One of the main areas of concern for the RN overall is the effect of the Black Hole which illustrates how things can go wrong To conduct Manpower Planning the future Trained Strength is predicted by computer modelling techniques that draw on all the Strength data in the Naval Manpower Management Information System then applies assumptions on future inflow and outflow rates as well as promotion rates within the system By adjusting the assumptions within acceptable limits Manpower Planners attempt to adjust the size of the future Trained Strength to match the Requirement within the Branch in each Rank and Rate If a balance can be derived the assumptions applied are used to establish the manpower regulators that are issued in the form of targets for the forthcoming planning year(s) When things do go wrong manpower levers are used to hold the system together through push from the bottom (increase Gains to Trained Strength) and lock in at the top (such as 20E or Extensions Of Service)

Manpower planning is informed by 9 Naval Manning Principles

- Justifiable Civilians unless demonstrable need for Service incumbent (Uniformed personnel justified on the basis of the Sea Bill or Shore Bill)
- Sea Bill Peacetime Ops or exercise and during crisis
- Shore Bill Essential HQ backup and sustainability (training, logistics margin)
- Priorities [illegible] mitigated annually (relative priority and [illegible] acceptable levels)
- Supply and Growth Bottom led Human Resource system for most RN Branches but there are differences for the RNMS
- Promotion Changes to Requirement affect promotion numbers
- Gender Nil gender discrimination for recruitment but there is in employment
- TCOS Agreement between Naval Service and individual
- Harmony Individual separated service (660 in 3 years)

The RN operates within a structure that ensures sustainability over time The structure is derived from a bottom led pyramidal in shape hierarchical manpower system Much of this is based on the Committee on Rating Structures report which articulates the application of a simple modelling technique to drive sustainability Although this is an old report, the ratios have stood the test of time and still define a sustainable structure for all specialisations Standard ratios defined in the CRUST work provide a baseline Branch Managers (BM) then determine whether specific ratios should vary (based on empirical evidence and modelling techniques) Each branch has an anchor ratio the required number of billets for sustainability is calculated using the BM ratio and the number of billets provided at the anchor rank/rate

Future challenges include the Deployable Medical Capability work which will set the numerical size (but not the shape) of the future specialty mix This highlights the difficulty of looking at overall numbers to deliver structural stability when we are as equally concerned with the individual specialty groupings to deliver deployable medical manpower The introduction of Modernising Medical Careers will increase the overall size of the Medical Officer cadre with a requirement to carry increased numbers covering Foundation Years 1&2

Equally Agenda for Change is being eagerly watched because of the potential to impact on recruitment and retention As manpower planning uses historical trend data in setting assumptions any emergent initiative such as AfC could have an impact on the best laid plans.

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Dentistry in the Fleet

Surgeon Lieutenant Commander (D) Kirsty Verney Royal Navy
SO2(Dent) Medical Operations Division

The 60 Dental Officers of the Royal Naval Dental Service (RNDS) are part of the Defence Dental Services (DDS) a tri service organisation which provides dental care to all service personnel Because of the unique environment of the RN with the majority of ships not having a permanent dentist the RNDS is specialised and focused to ensure that dental care for RN personnel is of the highest order

The Fleet Dental Surgeon (FDS)/SO2 Dental is part of the MEDOPS team in Fleet HQ and provides an overarching structure to monitor dental fitness at sea in addition to delivering dental first aid training to both medical and non medical personnel and acting as the first point of contact for all dental issues in the Fleet The FDS also briefs the LO CO and XO Designate courses about the dental support provided so that they may utilise the dental facilities available to them most effectively

The impact of dental pain at sea should not be underestimated Dental problems are common and if left untreated can be very debilitating However they are relatively easy to prevent and treat with the right personnel and equipment As the majority of ships do not carry a dentist and easy access to dental care is not possible it is essential that dental health is good to reduce the risk of personnel experiencing dental problems while deployed

The DDS measures dental health of service personnel by assessing their operational risk that is how likely is it that an individual will suffer a dental problem that will affect their carrying out their role effectively Patients are categorised as Dental Risk (DR) category A (Low Risk) B (Medium Risk) or C (High Risk) patients These and other related statistics measuring the treatment need of each platform are kept on the Dental Administration Database (DAD) onboard and are submitted by the MBR via email or hard copy on a monthly basis

On receipt of the statistics the dental database at MEDOPS is amended and scrutinised for indications of platforms requiring support The ship s medical team is contacted and arrangements made for provision of dental care either alongside or using a seafaring dental team if the ship is deployed

The base port clinics at HM Ships NELSON and DRAKE use a dental caravan and private mover to deliver care as near to the patient population as possible These allow dental screening and basic dentistry to be carried out alongside the ship minimizing the time patients are away and making access and attendance better Block bookings can be made for the whole ship s company identifying those patients who need further treatment which is most often carried out at the baseport clinic

Apart from the Aircraft Carriers and Assault Ships there are no permanent dental surgeries at sea To deliver treatment in ships without organic dental facilities a Portable Dental Unit (PDU) is used This is sent out and set up in the Sickbay and is capable of supporting inspections and routine dentistry

The use of a visiting team with a PDU has proven to be highly effective especially when a ship is short of time on its return to baseport It does however have a huge impact on the sickbay with access restricted to fresh cases for the medical team

Command and ship s medical teams are encouraged to use the facilities and expertise provided by the RNDS to ensure that personnel are dentally fit The FDS and baseport Ships Offices are here to make sure that there is maximum support to help maintain a dentally healthy patient population at sea

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Impressions from sea
– Medical Officer Perspective

Surgeon Lieutenant A M Dewynter Royal Navy
Medical Officer HMS CHATHAM October 2004 - July 2005

Mine is the tale of an extraordinary deployment. On 26th December 2004 there was a earthquake under the Indian Ocean that measured 9.15 on the Richter scale. It lasted for ten minutes. The resulting tsunami devastated the coasts of Indonesia, Thailand, Southern India, Sri Lanka and the Maldives and caused deaths up to 5000 miles from the earthquake's epicentre.

HMS Chatham was patrolling the Arabian Gulf that Boxing Day. Skies were uncharacteristically cloudy and the sea had an unusual swell, but there was nothing to suggest the disaster that had occurred. Rumours came from home that we might be sent but we believed our New Year stand off in Dubai was safe. We were wrong. Within 12 hours of arrival in Dubai we had been recalled and set sail the next day.

The four day voyage to SL was a time of planning but we remained in the dark as to what we were planning for. Without television or radio and with limited internet and e mail we were ignorant of the pictures and stories being publicised at home.

The days after arrival were frustrating, the 28 knot journey had engendered a sense of urgency and expectation but now we sat and waited.

Eventually reconnaissance teams sent from the ship began returning with potential projects. One morning two first aiders, six marines and I were dropped off by helicopter to go to a town where they had not seen a doctor since the disaster. When we arrived medics from the Indian Navy were already there running a fantastic medical facility. I did my sense of relief. I'd known better than to question command when they had instructed me to run a clinic for an unknown population with only the contents of two ship first aid packs to draw from but I'd been dreading the shambles it would have been. The Indian clinic was a model any Navy serious about humanitarian aid should aspire to.

Because our helicopter was not returning for six hours we headed south to look for other sites where our ship's company might help in the clean up.

We found Kallar, a village on the coast whose only road links crossed causeways, both of which had been destroyed by the tsunami. It was possible to wade across the broken sections but there was no vehicle access and therefore no aid arriving. I was taken by local people to the YMCA where I met Cathy, a South African who was co ordinating a small group of volunteers. She had drawn up a list of projects to get the village back on its feet. Unfortunately without resources and with very limited manpower these were floundering. I took her ideas back to the ship and after some negotiation work teams were committed.

Kallar is built on sand. During the tsunami's advance buildings had been knocked down as it receded, foundations had been sucked away to collapse, many of those buildings still standing. As the wave lost power it had deposited a thick carpet of dark vegetation mixed with the contents of people's lives: shoes, pots, pans, clothes, some still attached to washing lines, books, photographs, children's toys, lamps. This mat (now beginning to rot) filled what was left of people's homes and surrounded the ruins in which they were living. People were dazed and reluctant to interact with us. Perhaps in a country so scarred by conflict they were suspicious of our military appearance, perhaps the task seemed too enormous to begin, or perhaps their grief was simply too great.

The children were the first to come forward. On our initial visit to Kallar the marines had taught the boldest to sing and dance the Macarena. Day after day this lad of about ten

would appear prancing and reeling "Eh macarana" diving into the edge of any photograph he saw being taken and then disappearing behind his friends. Other children followed approaching us to stare scrounge food or play. One afternoon whilst waiting for transport back to the ship we fashioned drift wood into a cricket bat and began a match on the beach. Despite chunks of fallen building stray bricks and other assorted debris kids raced across the sand diving for catches without a thought of injury. Through all of this one lad sat alone and watched. While his peers made the best of the entertainment we provided he chose to remain apart and no amount of coaxing could get him to leave his fallen wall. What had he suffered and who he had lost we could only guess at.

I had been joined in Sri Lanka by Surg Lt Katy Bray. It was our plan from the first to run a clinic in Kallar once a section of the hospital had been restored to a level acceptable for this purpose.

On initial inspection it seemed an impossible task but when a group of enthusiastic junior rates are commanded by a respected senior rate no barriers are seen.

The village's water supply came from public wells that had been swamped by the tidal wave and were therefore unpotable. Using pumps and fire hoses brought from the ship brackish water was pumped out. This was used to clean wards walls equipment and the drains. Mops sponges buckets and sachets of disinfectant appeared from stores and the twenty strong work parties cleaned tirelessly. Sweat ran down the insides of our fours the fabric sticking to our skin making it difficult to move. We ate pot mess from jerry cans drank tepid boiled water and slept every other night on the floor of the YMCA under mosquito nets. To the untrained eye the place still looked a mess but huge improvements were made during our time in the village.

On the final day in Kallar Katy and I set up our clinic. We laid dressings out on rusting warped table and a range of medicaments from the MACCA on the other. For consulting we dragged in two park benches with peeling white paint and legs that were barely secure. A few nurses miraculously appeared to assist with translating and after a lunch of more pot mess the clinic began. Word spread and there was a queue along the length of the hospital. Most of our patients were children no one was seriously ill some had attended out of curiosity but the clinic was a symbol that normality (at least of sorts) had returned.

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Primary Casualty Receiving Facility
[Argus on Operational Sea Training]

Lieutenant Lee Hazard Royal Navy
Admin Officer PCRF, First Lieutenant INM

All have indeed heard of the terms "PCRF" "RFA ARGUS" and "HOSPITAL SHIP". The aim of this paper is to dispel the misconception, install the fact and link all three descriptors into a unified common approach to Role 3 maritime casualty care, which in March 2005 was exposed to its first Operational Sea Training.

EMBRYOLOGY / HISTORY

Built in Italy as the container ship Contender Bezant, RFA Argus was taken up from trade by the RFA during the Falklands War and subsequently converted, before being accepted as a permanent part of the Ministry of Defence and embedded in the Royal Fleet Auxiliary. The PCRF complex initially set out as a series of port-a-cabin containers situated in the forward hangar spaces. A £20m injection of money over a number of years post conflict converted this temporary facility into a state-of-the art Role 3 medical asset built into the ship's superstructure and under the watchful eye of the then Surgeon Captain Farquharson Roberts.

AIM OF THE PCRF

As a role 3 medical facility the aim of the PCRF is for the casualty to stay no longer than 3 days prior to their returning back to their Unit or evacuation rearwards. In comparison with other maritime medical assets globally the PCRF is world class and on entering the complex for the first time, one is easily awed. It is arguably better equipped than many NHS Hospitals, but with advances in medicine and its increasing age, it does have its shortfalls, however its greatest asset is its personnel whose ability, flexibility and skill make the PCRF what it is. Although the Argus is a Primary Casualty Receiving Facility she does not satisfy the criteria to be protected under the Geneva Convention and therefore not a hospital ship.

SO WHY NOT THE GENEVA CONVENTION?

Our American equivalents are the USNSs Comfort and Mercy who are governed by the Geneva Convention. To comply the ships are painted with a red cross, their position must be declared to the enemy, she can be boarded at any time & signals most not be encrypted. The PCRF is not governed by the Geneva Convention therefore none of the previous restrictions apply which can be of great strategic importance especially in expeditionary and littoral operations. This allows the PCRF close into the area of operations reducing transfer times from point of wounding and as such putting health care professionals fully in the forefront of the conflict. This must surely have been one of the driving factors for RFA Argus and the PCRF receiving Operational Sea Training.

OST

In March 2005 the PCRF underwent a major milestone as RFA Argus was paced through Operation Sea Training by the FOST team. This was the first time that the PCRF had been exercised under OST conditions and every individual embarked as PCRF staff was required to hit the exercise running, adapting to both a new environment and processes. The Rapid Reaction nature of the PCRF staff can be measured by stating that medical personnel were working in a normal hospital or sickbay environments on Friday and were closed up at simulated Action Stations for the first exercise serial and come the Monday.

Normally the work up period into OST would see a gradual cohesion of individuals to the task and team, however embarked PCRF staff were given a working weekend to become intimate with the Ship, the PCRF complex and the processes and procedures required to receive, triage, stabilize and dispatch casualties and an NBCD task instigated by FOST Staff. Prior to joining the Argus all embarked staff was required to complete the minimum of a one day sea survival training package. This was

bolstered at sea by a further one day damage control and fire fighting refresher training package ensuring that currency was maintained In hindsight the tempo and requirement placed on the embarked personnel exceeded the training received a factor not easily accepted by a FOST staff that are used to pacing a worked up and unified warship To use the analogy The personnel from 2 crewed type T23 frigates placed on a capital ship like a carrier expected to perform to operational tempo with the intimacy of their own ship clearly an unrealistic request from anyone

In my opinion having a standing PCRF crew was invaluable albeit, I believe understaffed with a Nursing Officer a CPOWEA who maintains the biomedical equipment and a POMA who tirelessly tries to maintain the turnover and level of stores consummate with the Ship s readiness category Despite the frustrations the team achieved a well prepared complex for Staff Sea Check with a high standard of cleanliness being picked up generally in the inability to secure for sea a defect which would require rectification during a maintenance period

As the Admin Officer I was first faced with the daunting task of preparing a watch and station bill for the PCRF allocating 715 duty and domestic roles to 247 embarked personnel whilst proving the emergency and evacuation procedures Traditionally we followed the Port and Starboard watch system and I was joined by a RM Band Captain who had never been at sea previously and who endeavoured to cope with concepts procedures and maritime terminology This identified a shortfall in the lack of appropriate manning within the administration cell OST fully tested the C3 organisation Command Control and Communication and I found myself on watch in the PCRF as Duty Ops officer and when I was supposed to be off watch I was closed up in the Ship s HQ1 An unsustainable situation.

The first exercise was a small injection of a dozen or so casualties The clinical specialties moved as well practised health care professionals and it was easy to see how the casualties were absorbed into the complex without too much strain on the machine As the tempo was increased a small fire soon engulfed the complex and the team put their damage control skills into practice With the first exercise completed the PCRF Executive team had relatively few shortfalls to bottom out.

Out of the defensive posture Argus entered an attack simulated exercise switching to Air and Surface Red – in other words an aircraft attack and ship engagement A doctrinal dilemma exists? Does the PCRF continue in its medical role or does it become the same role one organic medical asset such as a Type 23 frigate performing basic first aid and blood stopping surgery only? Does a surgeon continue to operate when under missile threat or in the dark during an electrical failure? What is the prescribed brace drill for those opened up on the theatre table or bed ridden in an ITU bed? This was discussed at length with no definitive answer leaving much to risk management where one weighs risk versus appetite and the moment is decided by the surgical team carrying out the procedure

In fact I believe FOST struggled conceptually with an operational role 3 medical facility afloat measuring PCRF casualty handling against the Ship s first aid teams Watching the Royal Marines band move with precision when casualty handling reinforced my view that they are the best at what they do FOST assessed them as pedantic meaning finicky and plodding I interpreted this as calm professionalism reiterating the misconception of the inspecting team coupled with the aloofness of Marines embarkation It was also difficult for the FOST team to assess the clinical skills and surgical procedures as the embarked medical staff are subject matter experts in their own right With this in mind it was evident that the focus would be on Command & Control observing the PCRF s reactions to NBCD incidents

So with the default setting engaged the FOST team recommended that the carer throw themselves across the bed ridden casualty performing an improvised brace drill This identified obvious shortfalls in self preservation and patient and equipment practicality During periods of sustained attack – and sometimes operating in total darkness – the calm of the doctors and nurses were tested is FOST complained of pounding screaming and suggestions that the theatre staff take out only what they need keeping the rest of the equipment stowed a comment that almost broke the Orthopaedic Surgeon s back!

THE FINAL EX

Finally the last day of OST the [illegible] Hands to action stations!

As the Sea Training reached its crescendo the Ship was thrown into a full NBCD 1 1 with Surface Air and Sub surface attack The PCRF received more casualties during the Final Ex than had been received during OP TELIC The Embarked Medical staff that were not on watch in the PCRF were closed up in the Wardroom or Junior Rates Dining Hall fully integrated into the Ship s firefighting & damage control organisation and offering a source of manpower to the ship So much so that a Surgeon Commander took charge of a ship s DC party shoring holes in the ships side and earning the total respect of the RFA and RN permanent crew

We were tested to our fullest, evacuating the PCRF complex to the Hangar This brought its own dilemmas such as do ITU patients remain within the complex or compromise vital man resources in their evacuation? Communication was never easy even from the PCRF Ops Room relying on a single telephone antiquated pipe system or email Once in the hangar all that technology went and we reverted back to mark one voice procedure set to loud and the runner Still we maintained command and control and fought our way back inside regaining a foothold in the complex

Overall and not without mitigation the PCRF achieved a ***JUST SAT*** although being the first PCRF OST there was no previous inspection report to gauge us against. The FOST inspection concentrated on the NBCD aspects of the PCRF what would happen in the event of fire floods and mass casualties Clinically the Medical Staff are some of the best in the Armed Forces and could not easily be assessed Embarked personnel received a one-day sea survival package which will undoubtedly underline shortfalls in the confidence in dealing with incidents coupled with their baptism of fire on joining an already worked up Ship

The FOST Team offered clinical and casualty handling advice such as that we should use Stryker trolleys on the upper deck during rough weather and the incidence of high fatalities caused through Passer s clipboards and unsecured drawing pins! Of course this was taken into consideration but I know from the Surgeon General s address he was proud of the effort put in by every individual who could not be faulted for the enthusiasm, courage and effort demonstrated by all

I still maintain that the PCRF remains one of the Royal Navy Medical Services best kept secrets under-utilised and extremely capable with its staff performing operationally every day Our patients are very rarely ***'for exercise, for exercise, for exercise'***!

Remembering my time onboard Argus during OST I cannot forget that none of this would have been possible if it were not for the excellent support and guidance given by the PCRF executive My sincere thanks to Surgeon Captain Sanderson as MOIC Commander Kennedy as Matron Commander Durning as PCRF XO and the embedded Hospital Officer Lieutenant Debs Emmerson QARNNS

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Impressions from sea
– LMA Perspective

LMA Colin Jones, HMS RALEIGH FATU

HMS RICHMOND sailed for APT(N) on 30 June 2004 from HM Naval Base Portsmouth. The ship was ready in all respects having recently completed DOST. The Medical Department was also ready although relatively inexperienced. The MO joined just two days prior to sailing having finished NEMO's course and the LMA joined three months previous at short notice. What the staff obviously didn't know was what was to come – yet the Shortcast looked promising!

- 30 JUNE. SAIL PORTSMOUTH

- JULY
- 11-14 BERMUDA
- 18 23 KEY WEST
- 29-02 AUG JAMAICA
- 08 11 COZUMEL
- 12 14 BELIZE
- 27 06 SEP SMF BARBADOS
- 20 25 SAN JUAN
- 26 28 MONTSERRAT
- 28 01 OCT MARTINIQUE
- 13 16 CURACAO
- 26 29 ST VINCENT

- NOVEMBER
- 12 16 CARTAGENA
- 26 29 LA GUAIRA

- DECEMBER
- 16 PORTSMOUTH

The Sickbay saw over 445 fresh cases (including one dog), 80 reviews and 8 aeromedical evacuations.

Within twenty minutes of departing Portsmouth the Sickbay had its first casualty presenting with mumps. This meant that the ships flight was scrambled and the first case was underway. Due to mumps being a communicable disease NMOH(F) was informed and provided [illegible] instructions [illegible] all 17 – 25 year olds onboard. The LMA had to fly to Boscombe Down to collect 200 MMR vaccinations. This created the first major workload with 71 personnel vaccinated within the next 24 hours along with 3 refusals. Unfortunately over the next two days another four cases of mumps presented. This required the 6 man cabin in 3K to be an area of quarantine accommodation to allow adequate barrier nursing techniques whilst the ship continued her 14 day voyage across the Atlantic. This was used for a period of 11 days with the patients only having the freedom of fresh air when the LMA escorted them. Again NMOH(F) were informed of the cases which brought more good news to the Sickbay – to vaccinate the whole Ship's Company!

Upon arrival in our first port of call Bermuda we released the mumps patients back to freedom. This didn't mean an easy time for the departments staff as there was a handover of APT(N) disaster relief stores modules to be received from HMS MONMOUTH. There were 50 boxes ranging from WHO, MACA, TROPICAL and PAEDIATRIC modules to take onboard. This was a challenge in itself arranging storage for the next 6 months. Unfortunately the modules had not been well maintained and required complete renovation.

Once handover had taken place we had the first reports of a casualty on the 1st and. One of the Ship's Company had fractured his ankle after jumping off a rock into the sea. This was not all though, we then had our first problem with the tropical rig. A member of the flight suffered chronic contact dermatitis caused by his deck shoes. Obviously these two patients were our next two aeromedical evacuations.

Immediately after departing Bermuda we sailed for Key West, Florida. Whilst in Key West

we hoped [illegible] this didn't happen. Here we had our first casualty on day one of arriving: a young OM decided to severely lacerate his thumb with a Samurai sword he had just purchased. Just our luck there were no adequate medical facilities in Key West so the patient was transferred to a hand clinic in Miami where he had reconstructive surgery. This required the MO and LMA to commute to Miami daily which was approximately 4 hrs drive away. The next casualty was a member of the wardroom who inverted his ankle whilst trying to get back into his golf buggy. Fortunately he only sprained the ankle but was unable to weight bear meaning he was unfit to sail. This prodeced our next two aeromedical evacuations.

En route to Belize we started to see an increase in climate related fungal skin infections. This was the start of an impetigo outbreak which we traced back to the headsets in the ops room. This meant the re-sterilising and fumigation of personal hygiene issues and such like. If this wasn't enough we then ended up with a D&V outbreak with the cause unknown. This meant stringent measures including the cessation of salads and communal cups in the galley.

Our next stop took us to Barbados where we had a 12 day SMP planned. The Ship was to be manned by duty watch only leaving the rest of the Ship's Company to have family and friends fly over. After 3 days alongside, the weather took a turn for the worse with a hurricane en route to Turks and Caicos Islands in British overseas territory. This meant the Ship's Company had to be recalled and the Ship sailed to provide emergency disaster relief operations. Unfortuntely 40 families were left behind along with one member of the Ships Company who sustained intermediate burns to both feet and was aeromedically evacuated.

Fortunately the Turks and Caicos Islands were well prepared and little damage was sustained. Therefore RICHMOND's help was not required.

The Ship then received information that the Hurricane (IVAN) was heading towards Grenada. The Ship followed in the course of the Hurricane, prepared to carry out disaster relief operations if required. The Hurricane ripped through the Island of Grenada which was largely unprepared for the disaster due to its poor infrastructure. The Ship then anchored off the Island at first light ready to send teams of multi skilled workers ashore. First Aid teams were sent from RICHMOND and also RFA WAVERULER. The teams provided much needed help to the local hospital as it had been hit hard with the loss of roofing, power and staff. The teams managed to restore power supplies along with a degree of normality and set up a temporary minor treatments bay outside the existing A&E department. A temporary mortuary was established due to the overwhelming numbers of casualties. The Ship augmented the hospitals medical supplies with stock from the APT(N) modules. The hospital and local population were immensely grateful for the help provided by the Ship's teams.

The Ship departed Grenada after 2 days of relief operations bound for Grand Cayman the next Island to be hit by Hurricane IVAN.

Again RICHMOND provided First Aid teams for the operations. A slightly different approach was required here as the Island was better prepared and had good emergency plans in place. Here ambulance teams were made up of trained personnel. A First Aid post was established at the airport because of the thousands of holidaymakers trying to vacate the Island. Medical stores were provided again to the local hospital plus roving First Aid Teams were setup to provide first aid care to hurricane shelters.

Upon completion in Grand Cayman, the Ship took some much needed R&R in San Juan. The SPRINT team were mobilised to the Ship ensuring the Ship's Company were not suffering from PTSD and to provide some external support. Luckily this stop was relatively uneventful for the medical department.

Prior to our next stop the ship had programmed two weeks at sea to perform Counter Drug (CD) operations. Whilst this was ongoing the sickbay received a patient with acute appendicitis. The CO was informed and the CD ops were temporarily put on hold while the Ship sailed inland to evacuate the patient to further medical care. The Ship managed to gain diplomatic clearance to enter Colombian waters and fly the patient to the nearest hospital. Meanwhile onboard the patient's condition deteriorated and the appendix ruptured. The patient was then aeromedically evacuated with

the MO to the Columbian hospital were he underwent an emergency laparotomy and appendicectomy He was eventually repatriated to the UK one week post surgery

Our last stop was La Guaira Venezuela Again the Medical department was not allowed to rest as we had a patient present with an inguinal hernia This patient was aeromedically evacuated on the fore thought that the Ship was about to spend two weeks crossing the Atlantic with the possibility that the hernia may strangulate

As you have seen, the Ship had a busy six month deployment especially the Medical department

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An overview of the Institute of Naval Medicine

Surgeon Captain M R Dean
President of Naval Service Medical Board of Survey

INTRODUCTION

In 1948 the Royal Navy Medical School moved into Monkton House (the large white house on the present INM site) By the 1960s the organisation was involved in both training and operational support It was a time of rapid development for the Royal Navy nuclear powered submarines were being introduced the Polaris nuclear deterrent programme became operational complex diving protocols and new equipment was being introduced These operational tasks required considerable scientific and medical input Consequently the INM site became too small for both training and the required medical research and development. Therefore in 1969 the Medical School moved to the RNH Haslar and the site in Crescent Road was renamed the Institute of Naval Medicine From this date onwards INM became a focal point for operational medical support to the Royal Navy and indeed the other two Armed Services when required

INM s role is well defined by the organisation s Mission Statement To excel in contributing to and improving the Royal Navy s operational capability by promoting good health and safety and maximising the effectiveness of personnel

The motto on INM s crest is *e mari ad salutem* which translates to from the sea to health The crest depicts a lemon tree rising from the waves to remind us of the work done by James Lind In 1747 aboard HMS Salisbury he undertook a randomised control trial with scorbutic sailors and demonstrated that lemons and limes prevented (and cured) scurvy It took him six years to write up his treatise and it took the Admiralty Board 42 years to put his recommendations into practice Things do happen a bit quicker now[1]

There are approximately 120 people working in INM s eight divisions There is close co-operation and support across the divisions and this is seen as one of INM s major strengths The close inter departmental working relationship ensures a high standard of advice and support to the various customers So what does INM do? It is impossible to cover all aspects in this short presentation but some of the topical issues are as follows

DIVING AND HYPERBARIC MEDICINE

This Division is lead by Surgeon Commander Crawford Foster The 3 main areas of work are

Clinical support The RN has 1500 divers and undertakes around 20 000 dives each year Over the last few years there have been 20 – 40 incidents per year that require some form of medical input This reactive treatment service is vital however preventative medicine is the mainstay to maintaining the safety standard of RN diving Accordingly the Division determines the fitness to dive (including wet Submarine Escape Tank Training (SETT)) of some 200 potential RN divers and submariners each year An on call Duty Diving Medical Officer maintains 24-hour support to RN diving operations providing world wide telephone advice and a treatment service in the hyperbaric chambers located at Haslar and Queen Alexandra Hospitals Much of the high risk diving is undertaken in the Portsmouth area The SETT training diving equipment evaluation submarine escape simulation and diver training at Horsea Island all require the presence of an on site diving medicine specialist should something go wrong The hyperbaric facilities are also available to civilians In the summer months it is not uncommon to see the chambers being used at the weekend to treat sports divers who have got into difficulties

Operational Support The Division deploys to provide support to operations such as deep water

diving trials of new equipment, the Submarine Escape and Rescue Organisation the NATO submarine escape and rescue exercises and special forces operations

Training Medical Officers from the three Services require training in Diving Medicine. The Division runs the Standard Undersea Medicine Course (and refresher course). Additionally the Defence Diver Enhanced Medical Skills Course is aimed at Medical Assistants and Service divers. The SETT Medical Officer is seconded to INM prior to taking up his appointment at Fort Blockhouse. Finally SpRs in Occupational Medicine rotate through the Division

SUBMARINE AND RADIATION MEDICINE

This Division is lead by Surgeon Commander Graeme Nicholson

Submarine Medicine INM is the focal point for occupational medicine advice in the submarine flotilla. The Division trains all Medical Officers and Medical Assistants prior to deployment. In the early days of the nuclear submarine programme and the Polaris Missile programme INM was involved in research into the health effects of living and working for prolonged periods within the confines of the enclosed pressure hull. The requirement for this type of expertise continues. The focus over the last few years is as follows

The Astute Class Submarine. Providing specialist advice on atmosphere control and habitability issues of this new class of submarine

NATO Escape and Rescue Procedures. NATO has a very active and professional escape and rescue programme. This year Exercise Sorbet Royale (held in Italian waters) saw the first mass casualty rescue by submersible. Eighty casualties were recovered by the UK and Italian rescue systems in less than 36 hours. The build up of pressure within the simulated distressed submarine required the use of complex diving treatment tables. INM has also been heavily involved in the design criteria for the new NATO Submarine Rescue System soon to be located in the Clyde in early 2007

Fitness for Submarine Service. The division is developing an evidence-based system to help with determining medical fitness for submarine service. At present some 50% of crew will require a review of their SM fitness

Radiation Medicine INM is the Tri Service focal point for radiation medicine advice and operational support. Support to the MoD Nuclear Accident Response Organisation (NARO) forms the major part of this work. Advice is provided on the medical issues pertaining to nuclear reactor and nuclear weapon accidents. The department deploys operationally when required and has been involved in major work on the depleted uranium screening programme for Op Telic veterans. Additionally work involved in Military aid to Civil Powers has grown due to the increased terrorist threat. This has required the Radiation Medicine Department to work closely with the newly created Health Protection Agency Radiation Protection Organisation. Finally the department trains medical personnel from all three Services running the annual Senior Medical Officers Radiation Medicine Course

MEDICAL ADMINISTRATION DIVISION

Lt David Scarborough leads this division. The Medical Administration Division consists of 4 subgroups Medical Records the Naval Service Medical Board of Survey (NSMBOS) the Resettlement Officer and the Medico Legal section. All are vital to the smooth running of the RN medical services. A recent issue has been the backlog of cases awaiting NSMBOS. To reduce the backlog over 1000 cases were seen in 2004. Of these 367 were invalided (Employment category P8). The rest were retained in altered medical categories

ENVIRONMENTAL MEDICINE DIVISION

This division is lead by Dr Adrian Allsopp a physiologist. The 3 main areas of work are outlined below. The cold injury and heat injury clinics have seen an increase in referrals over recent months and members of the department have deployed to Iraq to advise deployed forces on acclimatisation in the heat

Survival and thermal medicine The work in this area was initiated by the fact that approximately 66% of RN casualties during WWII were due to hypothermia and exposure. The main function of the Survival and Thermal Medicine Department is to maintain the

operational effectiveness by conducting research and providing specialist advice in the areas of cold weather injuries immersion hypothermia and survival equipment The group offers clinical support on a tri Service basis in the form of a cold weather injuries clinic

Applied Physiology The Applied Physiology Department aims to optimize the effectiveness of Royal Navy and Royal Marine personnel through the provision of quality research consultative advice and clinical support. The main areas of expertise include physical activity nutrition heat stress thermal protection survival in the cold respiratory physiology and submarine related atmospheres Its primary concern is the impact of these stressors on the physiology of the individual and his/her subsequent operational performance

Human Factors The main function of the Human Factors Department is to maintain operational effectiveness by providing specialist advice in areas of ergonomics and psychology Areas being addressed are the maintenance of psychological and physiological performance during sustained and/or critical maritime operations enhancing human performance and safety in a motion environment, optimizing workship and associated systems design evaluation and optimizing of clothing working practices and ancillary equipment

OCCUPATION AND ENVIRONMENTAL SCIENCES DIVISION

This Division is led by Mr John Holden an occupational hygienist The main areas of work are in the fields of occupational hygiene toxicology submarine environmental chemistry and acoustics and vibration Some examples are as follows

The submarine atmosphere chemistry work extends to having a team trained and ready to undertake submarine atmosphere sea trials on demand Three such trials have been undertaken recently

The occupational hygienists and laboratory staff maintain a helicopter crash support team to provide occupational health and environmental pollution control assistance at rotary wing crash sites both in the UK and overseas INM advised remotely when HMS ENDURANCE's Lynx crashed in Antarctica in 2004 A site remediation plan was prepared and emailed to the site within one working day The division also attended and advised on the Puma crash at Basrah airfield and the lynx crash in Bosnia Herzegovina.

Some aspects of helicopter repair provide an example of both occupational hygiene and toxicology problems A polyurethane foam preparation is used as a buoyancy aid in helicopter undercarriage assemblies, and this has to be applied during repair operations Polyurethane may contain free isocyanate which is a potent respiratory sensitiser INM is presently investigating this work related health risk with a view to recommending how exposure can be controlled

Concerns over exposure to depleted uranium in the original Gulf conflict lead to the development of a depleted uranium monitoring programme INM's accredited laboratory was tasked with developing a method of biological monitoring for both total uranium and uranium isotope ratios in urine examination of which is a good indicator of whether exposure has been to natural enriched or depleted uranium. Development of the process is complete and the screening programme is now up and running

TRAINING DIVISION

The Medical Officer in Charge at INM is the training policy adviser to MDGN Lt Cdr Roy Manwaring leads the training division with responsibility for training policy into practical training The division has designed and delivers a suite of operationally important training courses At present there are 23 differing courses and last year a total of 67 courses were held at INM

CORPORATE SERVICES

Finally in one of the above can progress smoothly and efficiently without corporate services This division is led by Dr Doug Smith and is responsible for IT the messenger services stores property management the registry and security

IN SUMMARY

In the time allotted to this presentation I have only been able to provide a brief outline of the type of work undertaken by INM However I hope I have been able to demonstrate that INM is indeed living up to its Mission Statement and motto *e mari ad valium*

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Critical Care Retrieval Revisited

Surgeon Lieutenant Commander R M Bateman FCARCSI Royal Navy
Specialist Registrar in Anaesthesia

ABSTRACT
In 2000 the Journal of the Royal Naval Medical Service published an account of critical care retrieval experience written by Adrian Mellor and based on his time spent with CareFlight in Sydney Australia. Having recently completed a term with the same organisation I wanted to reiterate the usefulness of such an attachment.

The purpose of this article is therefore to compare my experiences with those of Surgeon Commander Mellor and to provide an update on the work involved in critical care retrieval within New South Wales.

INTRODUCTION
The state of New South Wales (NSW) has an area of 801 428 square kilometres (roughly four times the area of Great Britain) and a population of 6 663 700 (June 2002). NSW contributes 10% of the land mass of Australia and 34% of the population. The population density is greatest in the Greater Metropolitan Region around Sydney an area of 1580 square kilometres with a population of 4 155 000. The climate is generally mild although temperature extremes can range from 20oC to 50oC.

CareFlight a registered charity based at Westmead hospital approximately 25km west from the centre of Sydney has been operating since 1986. The organisation has a good history of taking military trainees from the UK and providing them with a six month term in retrieval medicine. Trainees are accepted from anaesthesia ICU or emergency medicine.

At present CareFlight operates three aircraft from two sites. The first site is the Westmead base where there is a winch equipped BK 117 and an Augusta Power (see Fig 2). The BK 117 carries out the bulk of the workload with the Power an site dedicated to the Head Injury Retrieval Trial (HIRT). This is a major ongoing

Figure 2. Three CareFlight [illegible]

trial concerned with the [illegible] treatment of head injured patients within the Sydney area. The second site is in Orange which is a small town approximately 4 hours drive from Sydney to the west of the Blue Mountains where there is an Augusta 119 (Koala). Registrars cover both sites although the majority of the time is spent at the Westmead base.

CareFlight's area of operations includes the western areas of the city of Sydney and extends

west into the NSW bush for several hundred kilometres. This area includes the Blue Mountains where the majority of the winch operations are carried out. The Eastern parts of the city and the coast are covered by a different organisation – Sydney Aeromedical Retrieval Service (SARS) – which also has a history of taking on UK military doctors. As always there is some blurring of the boundaries but in general there is an east west split through the city.

The organisation treats and transports a little over 1200 patients per year either by helicopter (55%), road ambulance (40%) or fixed wing aircraft (5%). Approximately 75% of all missions are inter hospital ICU transfers with the remainder being primary responses at an accident scene or search and rescue taskings. In addition CareFlight has an international arm which is a commercial operation dedicated to overseas retrieval and repatriation. Trainees are required to spend some of their time on international tasks and this can provide the opportunity to visit some of the more exotic locations in the South Pacific.

STAFF AND TRAINING

At present there are six full time registrars and a number of part time specialists. Registrars are employed for a six month term of which there are two each year. Terms run from Jan – July and from July – Jan. Registrar posts are all recognised for training by the Australian colleges of anaesthesia, ICM and emergency medicine. There is a college tutor and a supervisor of training. In addition, many of the specialists have an interest in teaching. The organisation has produced a number of papers relating to helicopter emergency medical services and has a database of over 11 000 missions. For the motivated trainee there are plenty of opportunities for audit and research.

The nature of the job requires an ability to function independently but there is no shortage of support available from specialists on the end of the telephone. All jobs are undertaken with a paramedic (there are no clinical nursing staff) plus or minus pilot and crewman when the helicopter is in use. Many of the air crew are from a military background (some even from the RN) and I certainly felt quite at home very quickly. In addition to the duty crew there an on call medical team providing 24 hour coverage to ensure that the helicopter is staffed at all times.

On commencement of the term new registrars attend a two week induction program: the first week is primarily made up of aircraft familiarisation and winch training. Although as a military doctor you will have had exposure to helicopter operations during your career medical staff are often viewed by air crew as excess baggage. The aim of this first week of training is to make you a useful member of a functional team rather than 80kg of ballast! The second week includes a pre-hospital trauma course and administrative issues as well as the Helicopter Underwater Escape Trainer. Also included in the initial training is a familiarisation visit to the canyons of the Blue Mountains: this is to ensure that registrars have at least some experience of these remote areas before being required to undertake rescue operations in them.

The clinical workload is supplemented by fortnightly teaching where registrars are expected to present topics. For many of the registrars time at CareFlight is their first exposure to pre hospital care and a great deal can be learned about this area of medicine where the paramedics are an invaluable source of information.

EQUIPMENT

The concept of a stretcher bridge to provide mobile intensive care facilities was pioneered by CareFlight and has remained largely unchanged since the 1990s. It is essentially comprised of a rigid structure in which all of the monitoring equipment is placed. This is then clamped to the Lifeport stretcher base and fits over the patient's legs. By modern intensive care standards the equipment used in the bridge is rather dated: the ventilator is an Oxylog 1000

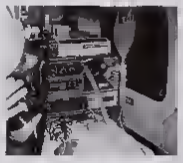

Figure 1. The Stretcher Bridge in position [illegible] the patient [illegible]

the monitor is a Propaq and the syringe drivers are simple in the extreme and are in the process of being updated. However I believe that this simplicity is where the strength of the system lies as access to the patient in transit can be very difficult and the requirement for kit to be foolproof far exceeds the need for sophistication. Simplifying the arrangement of monitoring and running only those infusions that are strictly necessary during the transfer reduces the likelihood of an error in disconnection.

Figure [illegible] Wintertime in the Blue Mountains

MY EXPERIENCE

During my term with CareFlight I undertook 69 retrievals, the breakdown of which is as follows:

	Ventilated		Non Ventilated	
	Primary	Secondary	Primary	Secondary
Road	0	27	0	3
Helicopter	3	9	10	11
Fixed Wing	0	4	0	1

In addition I undertook a search mission for a distress beacon which ended in the garage of a rather embarrassed boat owner whose EPIRB (Emergency Position Indicating Radio Beacon) had been triggered by accident.

RECENT DEVELOPMENTS AND FUTURE PLANS

There have been a number of changes at CareFlight since 2000, not least of which has been the increased workload, which has seen the number of missions rise from 75 per month to over 100 per month and the number of registrars increase from four to six. The base at Orange is a relatively new development that has vastly improved the ability of the organisation to reach into the isolated areas to the west of Sydney.

The number of aircraft operated by the organisation has increased from one to three and the HIRT trial is set to continue for the next three years.

SUMMARY

I enjoyed my time at CareFlight and found it to be a very positive experience overall. Working for a charity with a very high public profile, it is aware that its actions might have a knock-on effect in the way that the population at large views CareFlight. For this reason, it was necessary to be tactful at all times, even when opinions were dramatically divided concerning patient care!

Having the opportunity to work independently was of particular benefit in providing confidence prior to completion of my SpR training. However, when all is said and done, you just can't beat having the opportunity to fly around one of the world's great cities whilst practicing some challenging medicine to boot.

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The Defence Medical Library Service and Military Medicine.

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ABSTRACT
The Defence Medical Library Service (DMLS) supports the clinical practice and career development of military health professionals across the world Clinical governance and the need for medical knowledge to be evidence based means the DMLS has a central role to play in support of defence medicine The DMLS is important for enabling health professionals to make sense of the evidence-based pyramid and the hierarchy of medical knowledge The Royal Centre for Defence Medicine (RCDM) in Birmingham is recognised as an international centre of excellence The information knowledge and research requirements of the RCDM will provide opportunities for the DMLS to support and engage with the academic community

Keywords Knowledge information libraries military medicine

INTRODUCTION

The Defence Medical Library Service (DMLS) provides information to support the clinical practice education and self-development needs of military health professionals across the world Military medicine is essential for sustaining the effectiveness of armed forces in operational environments There are three principal enablers for the DMLS service delivery user education and training and support for research These core functions mean the DMLS has an important contribution to make in support of the clinical governance process and access to information will help to foster a culture of reflective practice amongst military clinicians

DMLS provides the evidence base for the delivery of the Defence Health Programme which has outlined a strategy for the care of military personnel until 2008 Military medical practice including health promotion and patient education are all governed by a war fighting imperative The requirement for personnel to be physically fit to deploy on operations means that military medicine is driven by occupational concerns

The creation of the Royal Centre for Defence Medicine (RCDM) in Birmingham with its university connections means the DMLS has the opportunity to develop as the academic centre of excellence for military medicine resources DMLS librarians have considerable experience of military medicine publications and this will ensure that the requirements of the RCDM are fully supported The DMLS Central Library is supporting students through usage agreements with the University of Birmingham University of Central England and the University Hospital Birmingham NHS Foundation Trust. When the DMLS Central Library relocates to Birmingham it will be more accessible to students on a day to day basis

Medical libraries in the Ministry of Defence offer much more than simple book and document supply services A range of electronic database tools and professional experience is available to enable customers to make sense of the hierarchy of medical knowledge as expressed through the evidence-based pyramid Information Communication Technology (ICT) can and will do much to enhance the delivery of medical library services in the future However one has to recognise that ICT does have certain limitations and it is just another mechanism for delivering an information service

A strategic plan with a global perspective should be written for the DMLS to ensure that the MoD

his a library information knowledge and research service geared to the needs of Defence Medical Services (DMS)

This paper emphasises the importance of the DMLS

MILITARY CONTEXT

The (DMS) has a multifaceted mandate to provide life saving care in war and provide care to soldiers and their families during peacetime This means that an effective strategy for exploiting the full potential of ICT for the provision of a first class Medical Information and Library Service is needed

British Forces Germany (BFG) is the largest of the MoD s overseas communities containing 55 000 to 60 000 people spread out across an area the size of Scotland Other areas include British Forces Cyprus (BFC) Gibraltar and the Falkland Islands Defence Medical Services operate on the basis of the NHS model to deliver care to these populations many of which mirror the health inequalities that exist in the UK

Clinicians working in these environments are isolated geographically from their NHS colleagues A DMLS information strategy needs to take account of these needs and avoid the temptation to adopt a UK Centric view of the world

CLINICAL GOVERNANCE

Healthcare today is managed through clinical governance a broad umbrella term that encompasses clinical effectiveness risk management and the application of evidence based medicine (EBM) The role of the DMLS is now more important than it ever has been given the need for health professionals to refer to research as part of their clinical practice Evidence based medicine involves the integration of clinical knowledge with the best available evidence[5] DMLS can act as a focal point for the provision of current information concerning a range of diseases and patient conditions Libraries are regarded by the NHS as a key resource for clinical effectiveness, for research and for education and training all of which are crucial to the delivery of high quality health care[6] Indeed knowledge in the health services has been defined as being as important as the nervous system in the body a vital component that keeps everything working to its best effect and helps the service grow and develop

Clinical governance runs through our practice whether we are involved in peacetime activities or military operations There is a vital role for the DMLS to play in ensuring that deployed personnel are supplied with clinical information this may be through the provision of books CDs or online resources The DMLS is the only organisation to have the unique capability to provide our clinicians with military medicine publications that meet our occupational requirements Specialised library collections are provided by the DMLS to every medical centre Royal Navy and Royal Fleet Auxiliary ships Ministry of Defence Hospital Units are supported by the DMLS with customised collections Additionally scaled lists are provided for trainee GPs GP trainers and specialist teams such as occupational health psychiatry environmental health veterinary science and rehabilitation units

ERA OF THE EXPERT PATIENT

Today s patients are much better informed than their predecessors about their medical conditions Research by the BMJ publishing group found that doctors reported that 88% of patients brought information downloaded from the Internet to a consultation[7] The concept of the patient as a passive recipient of medical care has gone and been replaced by a partnership between clinicians and those in receipt of medical care A common remark from doctors today is that my patient understands their disease better than I do[8] Indeed we are now living in a period that is commonly referred to as the era of the expert patient Consequently there is increasing pressure on clinicians to practice evidence based medicine and demonstrate that their practice is grounded in credible research

Libraries can play an integral role in supporting health professionals evidence based decision making Although health professionals need access to medical information time constraints and their hectic work load mean that they can seldom visit a library in person Access to evidence based medical literature is important for the provision of safe patient care

Although the Internet has widened access to medical knowledge a significant proportion of web based information is of a poor quality and

[illegible] from dubious sources

EVIDENCE BASED PYRAMID

In medicine there is a hierarchy of knowledge called the evidence based pyramid as shown in figure 1

The DMLS acts as a gateway to tools that allow clinicians to unravel the evidence based pyramid The DMLS provides access to a number of biomedical databases through the *Myathens Web Site*

RESEARCH

Libraries and information services have an important role to play in supporting the development of a culture of research within healthcare The Department of Health s research governance framework states that research is essential for the successful promotion of health and well being [4] It is now considered the norm that health professionals seeking career advancement will have a portfolio of published papers because research promotes modern reflective and safe clinical practice in those who carry it out

Within most areas of clinical practice there are opportunities for research, audit and epidemiological studies Although in some cases research can make an important [illegible] to knowledge and receive published [illegible] many small scale studies are also of value because they serve to reinforce current clinical practice by confirming what is already known or suspected about a particular physical or psychological condition Many healthcare providers such as the British Forces Germany Health Service (BFG HS) have *sharing best practice workshops* and *forums* where the results of local research such as asthma audits and smoking cessation campaigns can be presented and peer reviewed with fellow clinicians

Not all clinicians are experienced at reading research and some may feel intimidated by the task DMLS librarians can educate clinicians on how best to read research reports and how to analyse them for their respective strengths and weaknesses. Questions such as how the study was designed the size of the sample and whether quantitative or qualitative methods were used may not initially occur to those who are new to the research arena It is worth noting that although quantitative research methods are the gold standard for medical research in recent years qualitative approaches have been viewed as useful for adding an additional sociological perspective

Developing professional research proposals is a complex and time consuming process A

Figure 1 [illegible]

research proposal may need [illegible] several times following advice from [illegible] and the chosen university. Ethics committee approval will be required before the research can proceed. DMLS librarians have some knowledge of projects that members of the DMS have undertaken in the past so they may be able to offer practical advice with regard to the structuring of the proposal and research question.

Those undertaking research will need to develop an understanding of methods of statistical analysis such as the 95% confidence interval. The DMLS has a broad range of books covering the research process. Most text books that cover research methods will refer to the process of triangulation, which refers to the use of more than one method to conduct a research project. In theory the weaknesses of one method are counterbalanced by the strengths of another. A complex study may involve the use of several methods as illustrated in figure 2.

Many clinicians in the DMS are following part time courses often through distance learning modes of attendance. The busy nature of modern medical practice means that clinicians have limited amounts of time to complete assignments for qualifications such as MSc and other postgraduate awards. The medical librarians can provide advice and support to students on how to make best use of the information contained in journal articles, books and reports. Students often require some help and advice with their critical appraisal and essay writing skills. Spending just a small amount of time ensuring that they are on the right track with their MoD sponsored research in course can make a significant difference the outcome and ultimately their career.

DMLS STRUCTURE

The DMLS is part of the Defence Medical Education Training Agency (DMETA). The DMLS libraries are staffed by professional librarians (C2 grade) under the supervision of a

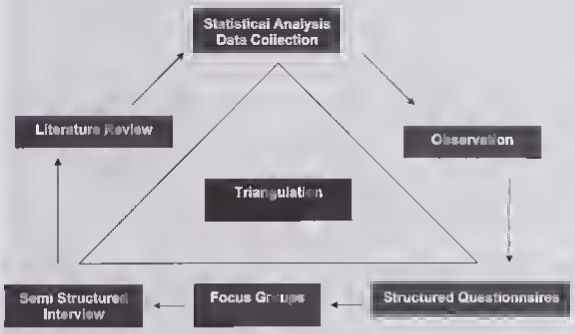

Figure 2. Triangulation

Senior Librarian appointed in January 2004 to DMLS HQ based at DMETA HQ

The DMLS Central Library provides primary and secondary care resources to entitled users in the UK and internationally with the exception of Germany. The BFG HS Medical Library provides resources to support the delivery of healthcare that aims to mirror those of a medium sized NHS Primary Care Trust. The Defence Medical Services Training Centre (DMTSC) at Keogh which is part of the RCDM has specialist holdings in occupational and environmental medicine. The Medical Library at RAF Henlow provides a specialist research and information service for the study of aviation medicine. The Institute of Naval Medicine Library provides the Royal Navy with specialist marine occupational and environmental science information.

FUTURE ROLE

The experience of MoD medical librarians and the unique context that British Forces operate within makes the DMLS well placed to become the focal point for research and studies in military medicine within academic circles. The positive engagement that has already been established with the universities in central England will benefit both parties and it will significantly widen access to resources for members of the DMS.

The NHS Information Authority that provides the backbone for the National Electronic Library for Health is based in Birmingham. The DMS aims to mirror UK standards of care and so the DMLS needs to have a positive and ongoing relationship with NHS colleagues. Birmingham will become a centre of excellence for military medicine in future years and the DMLS needs to be contributing to the success of this vision from the centre. In the future a web based military medicine portal could be developed in partnership with the NHS.

The American Library Association guidelines on distance learning state that academic libraries must meet the needs of all of their students regardless of their location[7]. Many of the DMLS library users fall into the category of distance learners and are at various locations throughout the world. A partnership with the NHS and an academic institution may provide the DMLS with access to technology and strategies to cope with the task of providing library services to people who are at remote locations.

One has to accept that distance and geographical boundaries will remain an important element of the human experience despite advances in technology[8]. Although technology will go along way to assist with communication across geographically dispersed areas it cannot replace face to face human interactions and especially the time and contexts in which they take place. The use of ICT may increase the isolation of clinicians working in remote areas if it is seen as an alternative to interaction and networking with colleagues.

The future role of DMLS could be encapsulated in the following slogan currently used by the BFGHS medical library.

Supporting research and best practice

The above slogan means supporting the clinical governance process through a two pronged approach mentoring and evidence based medicine. Having encouraged research and provided access to the best available evidence one has the ingredients to encourage clinicians to be reflective about their practice.

A diagram to illustrate these points is shown in figure 3.

CONCLUSION

Clinical governance, the advent of the era of the expert patient and the need for ongoing research means that the DMLS has a central role to play in supporting the clinical practice and educational needs of health professionals across defence medicine.

The long term future of the DMLS is dependent upon the formation of an intellectual philosophy that will govern its core functionality and provide a framework for its development. The advent of the RCDM and links with the University sector in Birmingham and elsewhere should not be viewed as a threat but rather as an opportunity to extend and develop the DMLS service. A positive engagement and willingness to participate with the academic activities of the RCDM will help to raise the profile of the DMLS within DMSD and ensure its long term future as a pivotal partner in the management and delivery

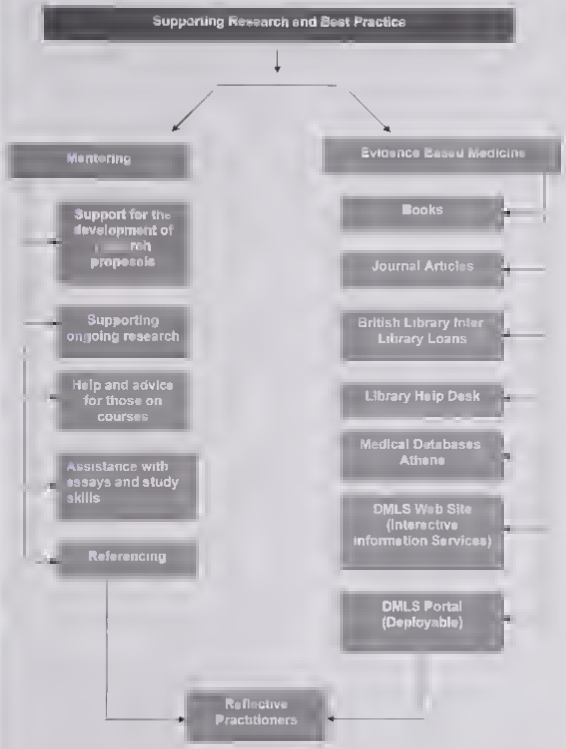

Figure 3 Supporting research and best practice is shown here.

of medical information

The network of DMLS Libraries provides the DMS with a professionally managed knowledge information and research service. The librarians themselves are a valuable resource for answering enquiries as many have developed their own networks of professional contacts in areas such occupational medicine and primary care. These networks are not easily definable or transferable but nevertheless are invaluable for answering important operational queries as they arise.

The DMLS has an important mentoring role in supporting the education and career development of military clinicians. The hierarchy of medical knowledge as expressed through the evidence based pyramid can seem daunting to those who have limited experience of research. DMLS librarians can break down barriers to knowledge by educating users in three areas: use of medical databases, critical appraisal skills for reading research and essay writing skills.

ICT will impact on the core functionality of the DMLS in future years as there will be more emphasis on providing information electronically than at present. To date the DMLS has provided members of the DMS with online access to databases including the NHS core content of full text journals through the *Myathens* gateway. In the future a Web presence should be authored for the DMLS around University standards so that robust academic research can be supported. The DMLS digital environment could include a deployable desk top with research tools, a mailbox for the receipt of articles supplied electronically in pdf format and forums for online journal clubs. The portal described here would need to be developed in partnership with the UK academic sector.

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Book Reviews

Differential Diagnosis in Dermatology 3rd Ed
Richard Ashton Barbara Leppard
Radcliffe Publishing ISBN 185775 660 6
Soft back, 410 pages

The 3rd edition of this textbook contains some significant improvements which add to the effectiveness of the book as a resource and to the pleasure to the reader by the quality of its illustrations

It is written by specialist dermatologists aimed at the general practitioner Those familiar with previous editions will recognise the algorithms supporting the diagnostic process

The first 2 chapters are essential reading the contents of which cover the basics of skin biology and a brief overview of dermatological pharmacology The colour photographs are outstanding and illustrate points made in the text effectively

There is repetition inside the front cover and on the back of the back cover instructing the reader as to how the book should be used, this emphasis is correct for without it the value of the resource as a diagnostic aid is greatly diminished

The book then settles down into its usual routine of chapter by chapter description and analysis of various regions The point not to be missed is the determinant of acute and chronic rashes at the 2 weeks interval The major additions to this new edition are the accompanying text boxes describing treatments The juxtaposition allowed by the use of text boxes with the disease narrative should mean this resource is readily usable in the consultation room

This is already a well established textbook I feel it has been significantly improved by the addition of information covering treatments To condense so much information into such an attractive style is a significant achievement and the authors are to be applauded

It will be of greatest value to General Practitioners at the start of their careers before they have been conditioned Pavlovian style into the look and say school of GP dermatology

If I have one criticism it is this I miss the drawings illustrating skin lesions contained in previous editions

Surgeon Commander M P Randle
Royal Navy

Feeding Nelson's navy the true story of food at sea in the Georgian era.
Janet Macdonald London Chatham Publishing Pennsylvania Stackpole Books 2004 ISBN 1 86176 233 X £19 99 224 pp

Janet Macdonald nails her colours to the mast in her foreword with "A navy fed on rotten meat and weevilly biscuits? My experience of the British working man is that the men would not have tolerated this not on such a diet would they have been capable of the very hard physical work involved in sailing and fighting a ship "

A firm rejoinder to the clichés so beloved of film and fiction but little more than 60 years before Trafalgar in 1742 at one point in Anson's circumnavigation of 961 men who had sailed in the three surviving warships, scurvy cold and privation had killed all but 335 too few to man even the *Centurion* properly ? How come then were things so different by Nelson's time?

Effectively Macdonald begins her story with Samuel Pepys victualling contract of 31 December 1677 and a brief history of victualling by way of an introduction She then moves quickly to the Georgian period with a discussion both thorough and interesting of all aspects of victualling and eating aboard naval vessels Unsurprisingly a wide range of subjects is involved this must be one of the few books where cookery books and naval history justic side by side in the bibliography

Chapters cover the basic rations aboard ship – what they consisted of from where they were obtained and how they were stored and supplied also how their quality was controlled at least in theory if not necessarily in practice

This leads on to the Victualling Board and its role in keeping ships and men supplied the storage and administration of foodstuffs once afloat and in natural sequence to meals aboard Macdonald's study of the social nature of meals offers an interesting sidelight on life aboard ship among other things the difficulties of cooking in a galley that won't stay still must not be underestimated The supporting illustrations are furnished chiefly from the reconstructed galley aboard *HMS Victory* including the replica Brodie stove and give some idea of the difficulties involved

The penultimate chapter is a comparative study of the victualling of other contemporary navies and the final chapter covers Diet in health and sickness the core of the book from the naval medical point of view Only at this point is the Anson voyage cited though it might have made a useful point of comparison in the introduction however the discussions of scurvy and vitamin A deficiency together with the background on contemporary cures and preventatives are wide-ranging and useful It is important to note that comments from naval surgeons and physicians of the day are not restricted to this chapter but appear throughout the book

Further on medical issues Appendix 3 deals with calorific values of naval foodstuffs and Appendix 4 with the vitamin A and C content of naval food while those readers who feel like experimenting can apply themselves to Appendix 6 Eat like a sailor The recipes have apparently all been tested though whether time will be available to recreate the portable soup is another matter though this reviewer has every intention of surveying the *Nelas (punch)* as soon as possible

The book is well produced with only a couple of minor typographical errors at times the style becomes a little jocular with amusing anecdotes indicated by the use of the exclamation point And delightful as the story on p 111 in of square meal deriving from the square dishes used aboard ship it must be said that the Oxford English Dictionary gives the phrase as originating from the United States and not recorded until 1868

One flaw in the book is that in pursuit of her theory the author makes some sweeping generalisations to dismiss what she calls the oh weren't it awful brigade and naive writers such as John Masefield who was in his twenties when he wrote *Sea life in Nelson's time* (p 12) However naïve Masefield really was at 27 in 1905 when his book was published he had already trained (1891) as an officer in the merchant marine and sailed (1894) for Chile via the Cape and must be allowed some experience It is more likely that he made the common error of thinking that the poor victualling of the mercantile marine in history applied also to the Royal Navy as Macdonald does indeed suggest And Macdonald's statement that although there was a general opinion among British seamen that foreigners were not as good in a fight as an Englishman there is no evidence that this even if true was related to the quality or quantity of food (p 150) can be contradicted by Jahan de Zulueta's paper in the same special issue of the JRNMS from which other papers in Macdonald's bibliography are cited

However these are lesser points and in the end the book is to be thoroughly recommended for its easy style and thorough coverage of its subject

Jane Wickenden
Historic Collections Librarian
Institute of Naval Medicine Alverstoke

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The Gates of Stonehouse
Vanguard Press by Thomas E Lightburn
Elliott MacKenzie Publishers 2005 £9 99 ISBN 1 843862 03-4 pp 342

This very readable book is not a reference book or instructional volume it is an affectionate and lively account of Tom Lightburn's career as a Sick Berth Attendant and then Medical Assistant in the Royal Navy He served between 1952 and 1974 and the book brings many happy memories of how the Naval Hospitals Ships and

Establishments were organised and run in the 1950's and 60's.

Throughout the book his enthusiasm and commitment to the Royal Navy in general and the Medical Branch in particular is evident, making it a very easy and interesting read. It has much service humour, some romance, raunchy runs ashore and lively accounts of his time both aboard ship and ashore. Branch members who served at any time during these years will recognise many of the personalities mentioned in the book and indeed some readers will remember Tom Lightburn as a likeable, amusing and totally sincere man from Wallasey. It will also bring back to many the mixed feelings of excitement, trepidation, anticipation and occasionally fear associated with ones first ships as the "Doc".

I enjoyed this book enormously and commend it to you as a good read that is nostalgic, amusing and interesting.

Commodore Frank Reed OBE
Royal Navy

Counselling Victims of Warfare: Person Centred Dialogues.
Richard Bryant Jefferies Radcliffe Publishing Oxford 2005 £19.95

It seems that these days whenever one hears a media report that a traumatic event has happened the subsequent sentence is "counsellors are in attendance". The implication is that the survivors or victims of the traumatic event somehow need counselling in order to re-establish their lives. Although to the lay public this may seem entirely intuitive, those with a modicum of knowledge will be aware that this is not a good idea. The recent National Institute of Clinical Excellence (NICE) guidance on the treatment of Post Traumatic Stress Disorder have confirmed that post incident counselling is not useful and indeed should not be routine practice. A Cochrane Systematic review and a Lancet Meta analysis on the subject reached the same conclusion a few years earlier. Both point out that single session trauma counselling (often known as debriefing) may not just be ineffective but has the potential to do harm. Therefore it might seem logical to think that a book on the subject of counselling victims of warfare if it were to be based upon scientific evidence would be not be a compelling read.

However Richard Bryant Jefferies book does not purport to add to the already considerable quagmire of post trauma counselling manuals, rather his book attempts to enlighten readers about how to handle those who are left with definitive psychologically injuries as a result of their war related experiences. It is clear that he does not believe in a NICE compliant therapeutic approach. There is no mention of either Cognitive Behavioral Therapy or Eye Movement Desensitisation and Reprocessing, both of which have the NICE "seal of approval". If readers are hoping for a state of the art manual for use with those who have trauma related psychological injuries, then they will be disappointed.

However the book is not without merit. The two case studies (one of whom is a service veteran) that form the bulk of the book show how the principles of person centred therapy, namely empathy, warmth and unconditional positive regard are essential part of the so called "therapeutic alliance". In therapy of any sort, whether it be NICE compliant or not, the relationship between the therapist and the person undergoing therapy is a vital ingredient in determining the outcome. Counselling victims of warfare demonstrates that if one works hard at forging that relationship positive outcomes may be achievable, whatever the form of psychotherapeutic intervention is used. Thus even if the book does not describe a formulaic therapeutic process which modern psychiatry or psychology would approve of, the principles behind the therapeutic process of client centred therapy are worthy of attention. I suggest the book is more of a Sunday afternoon read than an academic bookshelf must have.

Surgeon Commander Neil Greenberg
Royal Navy
OC DCMH Portsmouth/Senior Lecturer in Military Psychiatry King's College London

J Royal Naval Medical Service 2005 91 3 180–183

Letters to Editor

Commodore F Reed OBE Royal Navy,
Editor Journal of the Royal Naval
Medical Service,
Institute of Naval Medicine,
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Gosport
Hants
PO12 2DL

23rd September 2005

Dear Commodore Reed

I read with interest the topical article on *The Most Triumphant Death* by Mr M Crumplin FRCS. (J Royal Naval Medical Service 2005 91 2 92-95)

I seem to remember that I read somewhere that the marksman who fired the fatal shot from the *Redoubtable* was a young French corporal named Robert Guillemard, who subsequently had a successful army career. Can any of your readers enlighten me further?

At the risk of taking up your space again, may I enquire if anyone knows any details of a William Barnett LOGAN, who served as a surgeon probationer in the Royal Navy during the Great War of 1914-1918? He was the author of *Dress of the Day, War and after reminiscences of the British Navy* (1930), London Marriot

Yours sincerely

Robin Ayres

Emeritus Consultant Chest Physician Liverpool.

Lieutenant Lee Hazard Royal Navy
Institute of Naval Medicine
Alverstoke
Hampshire
PO12 2DL

17th August 2005

Dear Lee

SIR JAMES WATT TRAFALGAR LECTURE – BARBER SURGEON'S HALL 26 APRIL 2005

Thank you for your very kind letter which I was delighted to receive. Alas Anno Domeni marches on and being 83 I make foolish mistakes and hope you can decipher my writing – my eyesight is poor!

At last I am able to send you an enlargement of the photo I took, on the above date of our memorable gathering which we all enjoyed so much.

Being with the Royal Navy always brings happy memories although I have other poignant memories of Hong Kong in 1945 as a member of RAF TIGER FORCE after the dropping of the atom bombs when I became a senior Staff Officer and met Admiral Sir Bruce Fraser. We had happy occasions with the Senior Service to which the RAF always looked up. I remember being very well entertained on the Submarine Depot Ship HMS ADAMANT and came home to Plymouth in December 1946 in great style on board the Aircraft Carrier HMS INDOMITABLE – one of the 3 RAF officers on board!

The ship's Navigation officer befriended me as a fellow navigator and showed me his Chart Room and the course he was plotting on the Chart he was keeping. When we entered Malta Harbour I was taken up to the Crow's Nest with my cine camera to watch and film the deck below the Royal marines Beating Retreat. I remember a group of us went ashore along with the daughter of the Admiral on Board for a happy few hours ashore!

I hope we meet again soon
Very best wishes and Good Luck!

Yours aye
Graham

19 October 2005

Subscription Secretary
JRNMS Office
Institute of Naval Medicine
Alverstoke
Gosport Hants PO12 2DI
England

Dear Sir/Madam

Re: Dr Lionel Joseph Evered, 462 Brentwood Village, Seaysbrook Drive, Kincumber, New South Wales, Australia

Would you please note for your records that my father, Lionel (Lee) Evered, died recently. I have included a few words below about his career, in the event that this may be of interest to his colleagues and friends.

Lionel Evered, who was generally known as Lee, was born in Southsea, England on 22 September 1921 and died in Woy Woy, Australia, on 27 June 2005. He was 83.

He trained as a doctor at Guy's Hospital, London, and subsequently joined the Royal Navy as a Surgeon Lieutenant for his national service from 1948 to 1950. After registrar appointments in diagnostic radiology at Guy's, the Royal Infirmary in Leicester and the Royal Postgraduate Hospital in Hammersmith, he re-joined the Royal Naval Medical Service in 1953.

His career with the Royal Navy included service on HM Ships Cleopatra, Reclaim and Girdle Ness, the guided missile trial ship. On shore he served with the Royal Marines at Eastney Barracks, the RN mobile x-ray unit and at RNH Plymouth. When he returned to civilian life he joined the RNR Merseyside Division and was awarded the Reserve Decoration as a Surgeon Commander in 1966.

In 1958 he was appointed Consultant Radiologist at the Mansfield and Chesterfield Group Hospitals. He moved to the Farnham Group Hospitals as Director of Radiology in 1965.

Migrating to Australia in 1967 as a Senior Staff Specialist in Radiology at the Royal Newcastle Hospital, he spent some time in private practice there before moving in 1979 to Canberra as Director of Radiology at the Royal Canberra Hospital from which he retired in 1986

He was a founding member of the National Association of Medical Specialists in Australia, serving as Federal Honorary Secretary for five years and Federal Honorary Treasurer for two years He became a Fellow of the Royal Australasian College of Radiologists in 1984

Strangely for a navy man, his great interest in retirement was army regimental history But he remained deeply interested in medicine and maintained his medical registration until he died. His wife, Nora, died in 2001 He is survived by two sons

Yours faithfully

John Evered

John Evered

I grew up in Alnwick and still remember the area well. Your Journal Vol 91 No 2 arriving in my letter brought back many happy memories, and I enjoyed reading the articles about Tweedale very much indeed. Congratulations on a fine publication.

J Royal Naval Medical Service 2005 91 3 184–186

Service News

Royal Navy Aviation Medicine Symposium 2005

Surgeon Lieutenant C R Hunter Royal Navy

On 01 June 2005 a group of the Royal Navy's Aviation Diplomates met at the RAF Centre for Aviation Medicine for the Royal Navy Aviation Medicine Symposium 2005. Air Commodore Coker OC RAFCAM started the mornings proceedings by welcoming everyone to RAF CAM.

There followed a discussion meeting opened by Surgeon Commander Johnston CA AvMed(RN) in which several business matters were discussed. Issues discussed included guidance for the use of Corrective Flying Spectacles (CFS) and Soft Contact Lenses (SCL) by aircrew and the need for greater vigilance when conducting eye inspections and checking visual acuity at Annual Aircrew Medicals (AACM).

The consensus of all members was that a greater awareness of the FMED154 is required personnel have been tasked with improving instructions for MBR PJT NEMO Courses and LSO/XO desig courses.

The NEMO Av Med Module is under constant review and the need for continuing medical education was agreed to be vital for the continued development and recruitment into the Av Med Cadre. Personnel were tasked with investigating the process and delivery of CME either by attendance of a refresher course or distance learning e.g. web-based.

The INM CD ROM ready reference contains a section on aviation medicine which is generally felt to be in need of revision. members were requested to review the current information and feed back for a future revision and update.

Operational Aircrew have routinely been offered DNA sampling for post crash identification over the last approximately four years. At present RN aircrew attending fixed wing refresher or ab initio training at RAF CAM are given the opportunity to provide a sample on a voluntary basis however within the rotary world of the Fleet Air Arm there remains a backlog of personnel who have not had this opportunity of sampling. Personnel were tasked with identifying potential numbers and devising a plan to reduce this backlog.

At the end of the morning session the group agreed there is a requirement to meet on an annual basis and the next symposium will be held in approximately twelve months.

After lunch in the Officer's Mess members reconvened and were joined by MDG(N) for an afternoon of presentations with a theme of Carrier Medicine. Surgeon Commodore Baldock spoke on his Thoughts from the last Fleet Carrier in which he recounted some of the lessons that were learnt about aviation medicine and large carrier operations. Captain Krushman of the United States Navy spoke about Aviation Medicine and Medical Manning on board USN Carriers. The afternoon ended with a presentation about the CVF and JSF projects by Lieutenant Commander Hopet from ACOS(AV) Future Carrier Staff.

AWARDS AND EXAMINATIONS

Lieutenant Commander R McGurngall
Royal Navy
MSc in Occupational Health with Distinction

Lieutenant Commander I M Phillips
Royal Navy
MSc Health Care Management with Merit

Surgeon Lieutenant J McKinlay
Royal Navy
MRCP Pt 1

Surgeon Lieutenant A M Wood
Royal Navy
MRCS Pts 1 & 2

Surgeon Lieutenant Commander C Gardner
Royal Navy
MRCP Pts 1 & 2

Surgeon Lieutenant Commander E Ar[illegible]
Royal Navy
FRCR

Surgeon Lieutenant Commander R Shah
Royal Navy
FRCS (Orth)

Surgeon Lieutenant M Khan
Royal Navy
MRCS

Surgeon Lieutenant Kate Roue
Royal Navy
Navy Women's Squash Champion

Surgeon Lieutenant Commander Matt Turner Royal Navy was Winner and Runner Up of the Armed Forces Photographer of the Year Award

The award was presented by the Duke of Westminster and Kate Adie

The winning photograph of HMS PORTLAND taken whilst in the Ascension Islands

CV

Surgeon Commodore J J W SYKES OStJ FRCP FFOM Royal Navy

Jim Sykes read medicine at the University of Dundee graduating MBChB in 1973. He entered the Royal Navy as a Medical Cadet in the rank of Surgeon Sub Lieutenant in March 1971. Following an appointment to HMS RECLAIM (the RN Deep Diving Trials ship) he trained to be a diving medical specialist at the Institute of Naval Medicine and the RN Physiological Laboratory. This was followed by a three year exchange with the United States Navy at Naval Medical Research Institute Bethesda. He was promoted to Surgeon Commander in December 1984 whilst in the US. On his return in 1985 he was appointed as Principal Medical Officer of HM Naval Base Rosyth and was accredited as a Consultant in Occupational Medicine in 1986.

In 1988 he returned to the Institute of Naval Medicine as Senior Medical Officer (Underwater) and in 1989 became Head of Undersea Medicine. In 1990 he was appointed as Professor of Naval Occupational Medicine a joint appointment with the Faculty of Occupational Medicine and a post he held concurrently with his other naval appointments until 1996. In 1992 he became Director of Health (Navy) at the Institute of Naval Medicine subsequently moving in post to the staff of the Medical Director General (Naval). He was promoted to Surgeon Captain in December 1998. He was appointed to the Defence Secondary Care Agency in April 1999 as Assistant Director (Performance Management).

He was elected as an Ordinary Member of the Board of the Faculty of Occupational Medicine in 1994 becoming Director of Continuing Medical Education and then Academic Dean (1996-1999). He was subsequently elected President of the Faculty and held office from May 1999 to May 2002. As President he represented the Faculty on the Academy of Medical Royal Colleges and the Specialist Training Authority. He remains a member of the STA Appeals Sub Committee.

In February 2002 he was promoted to Surgeon Commodore and appointed as Commandant and Defence Postgraduate Medical Dean of the Royal Defence Medical College in Gosport. In April 2002 on the closure of the Royal Defence Medical College he became the Defence Postgraduate Medical Dean moving to Birmingham in October 2002. As the Defence Dean he was a member of the Conference of Postgraduate Medical Deans and a member of the Department of Health's Modernising Medical Careers Advisory Board. He was inducted as a Brother Officer of the Order of St John of Jerusalem in 2004.

In September 2005 he was re appointed as Director of Health (Navy) prior to his appointment as Medical Officer in Charge of the Institute of Naval Medicine wef 10 Jan 06.

Jim is married with two children. His wife, Elizabeth is a Clinical Medical Officer practising Community Paediatrics with the Portsmouth and SE Hampshire NHS Community Trust.

The family home is in Gosport. Their interests include food and wine English churches cycling and by necessity gardens and gardening.

Obituaries

Surgeon Captain Bruce Jones FRCS RN

Bruce Jones who sadly died earlier this year was a gifted orthopaedic surgeon and a well respected member of the Naval Medical Service BVJ to his friends and colleagues Bruce was born in 1919 the son of a dental surgeon in Ringwood He was educated at Sherborne and began a career in dentistry before the war At the outbreak of the war in 1939 he transferred to medicine at the Charing Cross Hospital (which was evacuated to Glasgow for the duration of the war) and qualified MRCS LRCP in 1943 After wartime service as a Surgeon Lieutenant in HMS ABERDEEN he was demobilized in 1945 and began training in orthopaedics passing his FRCS in 1949 Bruce rejoined the Royal Navy in 1954 and was initially appointed to the Royal Naval Hospital Chatham as Orthopaedic specialist in those days one of the first to be professionally qualified He subsequently served in HMS GANGES and the Royal Naval Hospitals at Hong Kong Plymouth and Haslar and also set up medical facilities in Mauritius While serving in HMS ALBION covering the withdrawal from Aden he was promoted Surgeon Captain and ended his service as the senior Orthopaedic Surgeon at Haslar retiring in 1976 He was an Honorary Surgeon to HM the Queen from 1968 1976 and a Serving Brother of the Order of St John In orthopaedics he had been a founder of the Joint Services Orthopaedic Association On retirement he was appointed a civil consultant to the RAF Hospital Wroughton but sadly had to confine his work to outpatients when he suffered a first stroke in 1981 and finally ceased medical practice in 1984

Bruce was an excellent and highly professional surgeon greatly respected by his patients He was a kindly man who was always approachable by his subordinates and was well liked by his colleagues for his professionalism his gentle manner and his sense of humour His last illness was borne with great courage His wife Sheila whom he had married in 1954 nursed him devotedly in his last illness Bruce will be sadly missed by his family and many friends our deepest sympathy goes out to Sheila and his two sons

Surgeon Vice Admiral Sir Godfrey Milton Thompson KBE FRCP

LMA Craig Bennett (Bennie) 1982 | 2005

Craig was born in 1982 in Whitehaven Cumbria He joined the Royal Navy in November 1999 On completion of Medical Assistant training at DMSTC Aldershot he served in CTCRM Lympstone HMS LEEDS CASTLE HMS SULTAN and for a very short period INM Alverstoke

Craig has been described as a man with an engaging personality a permanent smile and a genial sense of humour He was dedicated to his family particularly to his wife Amy and son Elliott Craig loved football and rugby and was an avid supporter of Manchester United and St Helens In recognition of his sporting passion it was Craig final request that all those who attended his funeral should wear something red He was also a fan of the Manic Street Preachers and two pieces of their music Design for life and Bright eyes chosen by Craig were played at his funeral which was truly a celebration of his life Craig was a well liked and respected young man amongst all those that knew and loved him He died tragically on 29 September 2005 from illness at the young age of 22

Our heart felt sympathy goes to Craig s family his parents Malcolm and Marie wife Amy and young son Elliott and his brother Paul and sister Louise He will be sorely missed by all those who had the privilege of knowing him

Lieutenant D Scarborough
Royal Navy

Notice has been received of the deaths of Surgeon Lieutenant Commander Damian Timms RNR Surgeon Rear Admiral Francis Joseph O Kelly OBE RN (Rtd) Surgeon Captain W Whitrow RN (Rtd) The editor would welcome any words in memory of them

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Administration Notices

Management Committee

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Precautions are to be taken to preserve the confidentiality of [illegible] by masking the eyes in photographs. Where a patient or subject might be identified [illegible] from the text it is essential that written permission is obtained from that patient and forwarded with the manuscript. Reports of experiments on human subjects will not be considered unless the protocol was approved by an appropriate ethics committee and followed, and the authors state explicitly that each subject gave his or her informed written consent. A copy of the letter of approval issued by the ethics committee must be provided.

Preparation of manuscripts

Manuscripts must be in English in a form suitable for publication as against oral presentation. **Uniform Requirements For Manuscript Submitted to Biomedical Journals** (N Engl J Med 1997; **336**(4): 309-15) gives guidance. Short fin papers should be prefaced with an abstract of the hypothesis, argument and findings. This should not exceed 150 words. Headings within the text should be used to highlight the content of different sections. Where possible, manuscripts should be prepared in Microsoft Word on CD or floppy disc. Otherwise, they should be typewritten in double spacing on one side of A4 paper. The author should retain 1 copy of the disc/manuscript.

Title page

The title page should contain a concise informative title, up to five key words, the names and initials of all authors and their appointments, and the department(s)/institution(s)/ship(s)/establishment(s) where the work was carried out.

Tables and illustrations

Tables and illustrations (figures) should add to the paper rather than only repeating information presented in the text. Each table and illustration should be on an individual page separate from the text, be numbered in two distinct sequences in the order in which they are mentioned in the text, and have an explanatory caption (typed on a separate sheet for illustrations).

News photographs of academic, social, sport or other occasions involving members of the Royal Naval Medical Service are welcomed.

Normally, printed illustrations will be monochrome. The views of the Editor should be sought where colour illustration is thought to be essential or highly desirable. Photographs must be of good quality, glossy, unmounted, and be provided in camera ready form, with redundant areas trimmed off. The figure number, author's name and top/bottom should be marked on the back. Line drawings should be professionally drawn and labelled, or of equivalent standard and submitted as photographic prints or high quality photocopies. Lettering and numbering should be sufficiently large to ensure legibility after reduction for publication. Freehand lettering is not acceptable.

Measurements and abbreviations

Measurements should be given in the units in which they were made but, with the exception of blood pressure in mmHg and haemoglobin concentration in g/dl, non metric units must be accompanied by metric (SI) equivalents. The approved name of drugs should be used (proprietary names may follow in parentheses). If an abbreviation is used, the term for which it stands should be given in full at its first mention in the text, e.g. Institute of Naval Medicine (INM).

References

Responsibility for the accuracy and completeness of references lies with the author(s) and these will not be checked by editorial staff. Only essential references should be included, and authors should verify them against the original documents. References are identified in the text by superscript Arabic numerals and are numbered and listed consecutively at the end of the manuscript in the order in which they are first cited in the text. A full list of references should be given at the end of the paper using the form of reference adopted by *Index Medicus*. Papers accepted but not yet published should be included in the references followed by '(in press)'. Those in preparation (including any submitted for publication), personal communications and unpublished observations should be referred to as such in the text only.

Acknowledgments

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